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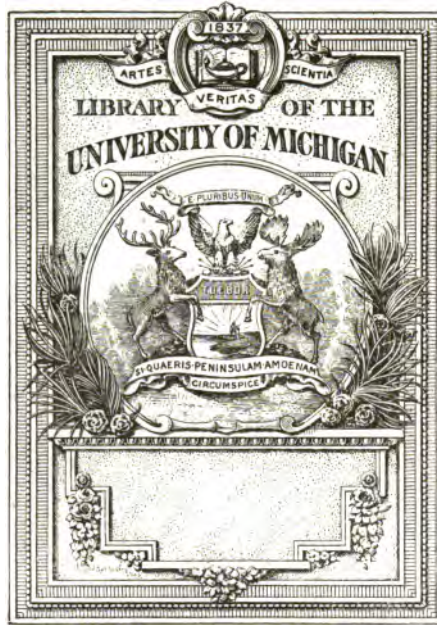
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FIFTH ANNUAL REPORT

OF THE

STATE BOARD OF HEALTH,

OF INDIANA,

FOR THE

Fiscal Year Ending October 31, 1886.

TO THE GOVERNOR.

INDIANAPOLIS:

WM. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING.

1887



THE STATE OF INDIANA, }  
GOVERNOR'S OFFICE, }  
December 21, 1886. }

Received and examined by the Governor.

DECEMBER 22, 1886.

Referred to the Auditor of State for verification of the financial statement.

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AUDITOR STATE'S OFFICE, }  
December 22, 1886. }

The financial exhibit in this report corresponds with the records of this office.

JAS. H. RICE,  
*Auditor of State.*

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DECEMBER 23, 1886.

Returned by the Auditor of State with his certificate, and transmitted to the Secretary of State for publication, upon the order of the Board of Commissioners of Public Printing and Binding.

PIERRE GRAY,  
*Private Secretary,*

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Filed in the office of the Secretary of State this 23d day of December, 1886.

W. R. MYERS,  
*Secretary of State.*



## BOARD OF HEALTH REPORT.

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To HON. ISAAC P. GRAY,

*Governor of the State of Indiana:*

Herewith is presented the fifth annual report of the State Board of Health, for the fiscal year ending October 31, 1886, together with the vital statistics for the year ending September 30, 1886:

During the period that this Board has been in existence, it has accomplished some of the objects for which it was created, viz: "It has made sanitary investigations and inquiries respecting the causes of mortality, and the effects of localities, employments, conditions, ingesta, habits and circumstances on the health of the people." With these objects steadily in view, it has, in all cases, so soon as they were reported, instituted measures and issued instructions to stamp out contagious and infectious diseases, and, if possible, to ascertain the causes thereof. The facts are at hand to warrant the belief that these efforts were in a high degree successful. Much more might be done if people could be aroused to a sense of danger, and in times of the absence of these diseases guard against their approach by adhering strictly to well known hygienic rules. The prompt application to the Board, however, in times of danger gives evidence of the increasing faith of our citizens in competent health authorities.

We are pleased to say that the medical profession generally has seconded the efforts put forth to restrict disease, although a few have not hesitated to say that "their business is to cure disease, not to prevent it."

Various inspections of public buildings have been made by members of the Board, reports of which will be found in this volume.

Contrary to the expectation of sanitary authorities and boards of health, cholera did not make any inroads in our country, and this happy result is undoubtedly due to the vigilance of those whose duty it has been to guard against an invasion of this hitherto fatal plague.

As heretofore, three thousand copies of our reports were published last year, and distributed to counties according to their population; but the supply is not nearly equal to the demand, and many who desired copies failed to get them because of the limited number provided for by law. Numerous persons interested in sanitary matters in all parts of our country, who were desirous of securing copies, were refused for like reasons.

Many communications from all parts of the State in relation to epidemics, cattle diseases, hog cholera, glanders, diseased meats, stagnant pools, nuisances of various kinds, etc., have been received. In all cases prompt replies were made, and such suggestions given as were deemed advisable in the premises. We are led to believe that much good is the result of this correspondence.

The administration of the law regulating the practice of medicine has been the subject of some discussion and controversy; but the objections to it have principally come from those who found it difficult to comply with its provisions. Like all new enactments, there was naturally some friction, but as time progresses this will wear away, and amendments to it will be made of a more stringent nature. The medical profession should see to it that no step backward is taken, and that the law be perfected. Its effect has been to lessen the number of practitioners six hundred and thirty-five.

We call attention to the articles upon different subjects from writers of ability, which are worthy of careful perusal.

As the law creating boards of health becomes better understood, its enforcement becomes easier, and greater results will be obtained. Frequent changes of county health officers, however, is a detriment to the service, and those who have shown a fitness for the duties of the position should be retained from year to year.

Respectfully submitted.

C. N. METCALF, M. D., *Secretary.*



## FINANCIAL EXHIBIT.

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The following is a statement of the receipts and expenditures for the fiscal year commencing November 1, 1885, and ending October 31, 1886 :

All accounts have been submitted to the Board at its regular meetings, allowed, certified to by the President and Secretary and audited by the Auditor of State before warrents were drawn for the same. Out of the annual appropriation of five thousand dollars to carry on the work of this department the members have been paid all actual expenses incurred by attending regular and special meetings of the Board, as well as expenses of sanitary inspections of various sections, and the different public institutions under the control of the State government. (Reports of inspections made by the members of the Board will be found in another part of this report.) From this fund we also pay office rent and current expenses of the same, clerk hire, printing bills, including all publications of the Board, except the annual report. The Board supplies all of the city, county and town health boards with physicians' blanks for the return of births, deaths, contagious and infectious diseases, County Clerks' blanks for the purpose of making returns of marriages, and also furnish county boards of health with blanks to make regular quarterly reports, as well as blanks for special reports of contagious and infectious diseases, programmes and all necessary printing for sanitary conventions held in the State.

We have a balance of *fifty-six cents* after meeting all obligations at the close of fiscal year ending October 31, 1886.

## FINANCIAL EXHIBIT.

## RECEIPTS.

By appropriation .....	\$5,000 00
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## DISBURSEMENTS.

*Expenses of Members.*

Samuel R. Seawright.....	\$191 20
Wm. Lomax.....	106 30
W. A. Fritsch.....	264 50
Samuel S. Boots.....	107 35

*Salaries.*

C. N. Metcalf, Secretary.....	\$1,200 00
D. N. Berg, clerk.....	1,000 00
F. M. Stewart, clerk.....	600 00
S. W. Burns, janitor .....	106 00

*Miscellaneous.*

Postage.....	\$150 00
W. B. Burford, printing.....	432 83
Office rent.....	240 00
Indianapolis Gas Co.....	8 28
Sanitary News.....	7 50
Eastman, Schleicher & Lee (draping building).....	16 30
Sanitarian.....	14 00
J. E. Cobb (stenographer).....	15 00
J. C. Truemper (awnings).....	12 00
J. L. Bingham (type writer).....	2 00
Indiana Insurance Co. ....	8 63
Frank Fertig (glazing).....	2 50
Indianapolis Ice Co .....	4 05
Microscope .....	156 00
C. N. Metcalf, expenses to Washington .....	50 00
C. N. Metcalf, expenses to Toronto.....	75 00
C. N. Metcalf, office expenses .....	230 00

Total.....	\$4,999 44
Balance on hand.....	56

Total.....	\$5,000 00
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## LIBRARY.

The library embraces a collection of works, by recognized authorities, on diseases of domestic animals, bacteria, cholera, drainage, food, hygiene, preventive medicine, sanitary science, sewers and sewage, small-pox, suicide, typhoid fever, water, zymotic diseases and miscellaneous works.

As there was a constant demand for works of this character by health officers, physicians and others who desired to pursue the study of sanitary subjects and matters relating to public health, the Board adopted a rule authorizing the Secretary to loan these works to responsible parties who wished to investigate subjects of interest to the department, or who desired to use them in the preparation of articles for publication, or to use in discussions before societies or conventions interested in the advancement of sanitary science.

The following is a complete catalogue of the books belonging to the library:

### AMERICAN HEALTH PRIMERS—TITLES AS FOLLOWS:

Brain Work and Overwork. . . . .	Wood.
Eyesight, and How to Care for It. . . . .	Harlan.
Hearing and How to Keep It. . . . .	Keen.
Long Life and How to Reach It . . . . .	Richardson.
Our Homes. . . . .	Hartshorn.
Sea Air and Sea Bathing. . . . .	Packard.
School and Industrial Hygiene. . . . .	Lincoln.
Summer and Its Diseases . . . . .	Wilson.
The Mouth and the Teeth . . . . .	White.
The Skin in Health and Disease . . . . .	Bulkeley.
The Throat and the Voice . . . . .	Cohen.
Winter and Its Dangers . . . . .	Osgood.

### APPLETON'S HEALTH PRIMERS.

Baths and Bathing.
Exercise and Training.
Personal Appearances.
Premature Death—Its Promotion or Prevention.
The House and Its Surroundings.
The Heart and Its Functions.
The Nervous System.
The Skin and Its Troubles.

## ANIMALS AND THEIR DISEASES.

Actinomykosis . . . . .	Fleming.
Animal Diseases and Their Relation to Public Health . .	Billings.
Animal Plagues (2 vols.). . . . .	Fleming.
Contagious Diseases of Cattle. . . . .	Fleming.
Contagious Diseases of Domestic Animals . . . . .	U. S. Bureau.
Diseases of Live Stock. . . . .	Tellor.
Human and Animal Variola. . . . .	Fleming.
Lung Plagues among Cattle . . . . .	Law.
Veterinary Science . . . . .	Williams.

## BACTERIA.

Bacteria . . . . .	Maguire.
Bacteria and the Germ Theory . . . . .	Gradle.

## DRAINAGE.

Agricultural Drainage. . . . .	Denton.
Drainage. . . . .	Gerhardt.
Drainage for Health. . . . .	Wilson.
Farm Drainage . . . . .	French.
House Drainage and Water Sewer . . . . .	Bayles.
Land Drainage . . . . .	Reeves.
Our Homes . . . . .	Murphy.

## FOOD.

Food and Poisons . . . . .	Blythe.
Health in Diet . . . . .	English Conference.

## HYGIENE.

Bazar Book of Health. . . . .	Harper.
Bible Hygiene . . . . .	By a Physician.
Hand Book of Hygiene . . . . .	Wilson.
Health in Relation to Civic Life . . . . .	English Conference.
How to Live . . . . .	Wilson.
Hygiene and Public Health (2 vols.) . . . . .	Buck.
Health. . . . .	Corfield.
Maintenance of Health . . . . .	Fothergill.

## PREVENTIVE MEDICINE.

Eyesight, Good and Bad . . . . .	Carter.
Dangers to Health. . . . .	Teale.
Preventive Medicine. . . . .	Richardson.
Seven Sources of Health. . . . .	Strange.

SANITARY SCIENCE.

American Sanitary Engineering . . . . .	Philbrick.
Dwelling Houses . . . . .	Corfield.
Hand-book of Sanitary Science . . . . .	Marsh.
Health in the Dwelling . . . . .	English Conference.
House Sanitation . . . . .	Denton.
Mechanics of Ventilation . . . . .	Rafter.
Sanitary Care and Treatment of Children . . . . .	Anderson and Jacobi.
Sanitary Construction of Dwellings . . . . .	Corfield.
Sanitary Condition of Houses . . . . .	Waring.
Sanitary Engineering . . . . .	Latham.
Sanitary Plumbing . . . . .	Helyer.
Sanitarian, The . . . . .	Bell.
Steam Heating . . . . .	Waldon.
Ventilation and Warming . . . . .	Drysdale and Hayward.
Ventilation . . . . .	Leeds.
Ventilation . . . . .	Billings.
Ventilation of Buildings . . . . .	Butler.

SEWERS AND SEWAGE.

Disposal of Sewage . . . . .	Robinson.
Sewers and Drains . . . . .	Adam.
Sewer and Gases . . . . .	De Varona.
Sewage Poisoning . . . . .	Blake.
Sewage and Its Utilization . . . . .	Corfield.

SEPULTURE.

Sepulture . . . . .	Wicks.
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SUICIDE.

Suicide . . . . .	Morcelli.
Suicide . . . . .	O'Dea.

VACCINATION.

Essentials of Vaccination . . . . .	Hardway.
Vaccination . . . . .	Edwards.
Vaccination . . . . .	Seaton.

WATER.

Potable Water . . . . .	Folkhard.
Examination of Water . . . . .	Fox.
Water . . . . .	Parry.
Water Analysis . . . . .	McDonald.
Water and Water Supply . . . . .	Corfield.
Water Supply . . . . .	Nichols.

## ZYMOTIC DISEASES.

Bovine Tuberculosis in Man . . . . .	Creighton.
Cholera . . . . .	McPherson.
Cholera, Asiatic, History of . . . . .	Macnamara.
Cholera in Europe, 1884 . . . . .	Report of Consuls.
Cholera in United States, 1873 . . . . .	Woodworth.
Contagious Diseases . . . . .	Morgan.
Contagiousness of Consumption . . . . .	Burney Yeo.
Common Nature of Epidemics . . . . .	Smith.
Diphtheria . . . . .	Jacobi.
Diphtheria . . . . .	Semple.
Enteric Fever . . . . .	Welch.
Epidemics of the Middle Ages . . . . .	Hecker.
Erysipelas and Child-bed Fever . . . . .	Minor.
History of Epidemics . . . . .	Bascome.
Hospitalism and Zymotic Diseases . . . . .	Kennedy.
Inquiry into Physical Causes of Epidemics . . . . .	Howe.
Malaria . . . . .	Edwards.
Relation of Micro-Organism . . . . .	Belfield.
Remote Causes of Epidemics . . . . .	Parkin.
Scarlatina Statistics . . . . .	Minor.
Syphilis and Marriage . . . . .	Fournier.
The Great Social Evil . . . . .	Logan.
Tuberculosis . . . . .	Sattler.
Typhoid Fever . . . . .	Budd.
Yellow Fever, Memphis Epidemic . . . . .	Keating.
Yellow Fever, Louisiana, 1878 . . . . .	
Zymotic Diseases . . . . .	Wolf.

## MISCELLANEOUS.

Alcoholic Inebriety . . . . .	Parrish.
Aristology, or Art of Dining . . . . .	Walker.
Art of Prolonging Life . . . . .	Hufland.
Causes of Color Among Races . . . . .	Sharp.
Color Blindness . . . . .	Jeffries.
Diseases of Interior Valley of N. A . . . . .	Drake.
Drugs that Enslave . . . . .	Kane.
Floating Matter in the Air . . . . .	Tyndale.
Hospitals and Infirmarys . . . . .	Oppert.
Human Faculty and Its Development . . . . .	Galton.
Human Body . . . . .	Martin.
Intermarriage . . . . .	Walker.
Labor Among Primitive People . . . . .	Engleman.
Legal Medicine (2 vols.) . . . . .	Tidy.
Medical Nursing . . . . .	Anderson.
Mineral Springs . . . . .	Walton.
Nurses' Companion . . . . .	Culingworth.
Philosophy of Marriage . . . . .	Ryan.
Physical Education . . . . .	Oswald.

Principles and Practice of Medicine . . . . .	Williams.
Sulphate of Quinine. . . . .	Manson.
The Black Arts of Medicine . . . . .	Jackson.
The Jukes . . . . .	Dugdale.
The School Laws of Indiana . . . . .	Holcombe.
Vital Statistics . . . . .	Plunkett.
What Every Mother Ought to Know . . . . .	Ellis.

#### REPORTS OF STATE BOARDS OF HEALTH.

Alabama, 1883, '84.  
 Arkansas, 1882.  
 California, 1870, '71, '72, '73, '74, '75, '76, '77, '80, '82, '83.  
 Colorado.  
 Connecticut, 1878, '79, '80, '81, '82, '83, '84.  
 Delaware, 1879, '80.  
 Illinois, 1879, '80, '82, '84, '85.  
 Iowa, 1881, '83, '85:  
 Kansas, First Annual Report, 1885.  
 Kentucky, 1880, '81, '82, '83.  
 Louisiana, 1872, '73, '75, '77, '78, '82, '83, '84.  
 Maine, First Annual Report, 1885.  
 Massachusetts, 1870, '71, '72, '73, '74, '75, '76, '77, '78, '79, '80, '83, '84, '85, with  
     registration reports and summary.  
 Michigan, 1873, '74, '75, '76, '77, '78, '79, '80, '81, '82, '83, '84, with registration re-  
     ports—1871, '72, '73.  
 Minnesota, 1874, '76, '78, '79, '80, '81, '82, '83, '84, with report of statistics—1882.  
 Mississippi, 1878, '79, '80, '81, '82, '83.  
 New Hampshire, 1882, '83, '85, '86, with registration reports.  
 New Jersey, 1878, '79, '80, '81, '84.  
 New York, 1880, '81, '82, '83, '84, '85.  
 Rhode Island, 1879, '80, '81, '82, '83, '85.  
 South Carolina, 1884, '85.  
 Tennessee, 1877, '80.  
 West Virginia, 1884.  
 Wisconsin, 1876, '77, '78, '79, '80, '81, '82, '83, '84, '85.

#### MEDICAL SOCIETY REPORTS.

Alabama Medical Association, 1870, '75, '80, '81, '85.  
 Maryland Medical Society, 1881, '82, '85.  
 Missouri Medical Society, 1883.  
 Nebraska Medical Society, 1880, '81, '82, '83, '84.  
 New Hampshire Medical Society, 1885.  
 Indiana Medical Society, 1875, '76, '80, '81, '82, '83, '84, '85.

#### INDIANA REPORTS.

Acts of the regular and special session, 1881, '83, '85.  
 Agricultural Reports, 1876, '81, '82, '84.  
 Auditor of State, 1882, '83, '84, '85.

Secretary of State, 1881, '82, '84.  
 State Geologist, 1870, '73, '74, '75, '80, '81, '82, '83, '84.  
 Superintendent Public Instruction, 1882, '84.  
 Statutes and Ordinances, Indianapolis, 1883.  
 The Opinions of Attorney General Hord, 1884.  
 The Annual Report of Indiana, 1883, '84.  
 The House Journal, 1881, '83.

## UNITED STATES REPORTS.

Bureau of Education.  
 Bureau of Ethnology.  
 Chief of Engineers U. S. Army.  
 Department of Agriculture.  
 Geological Survey of the U. S.  
 Hygienic and Medical Reports, Navy Department.  
 Marine Hospital Service.  
 National Board of Health.  
 National Museum.  
 Secretary of the Treasury on Epidemic Fund, 1884.  
 Smithsonian Institute.  
 Surgeon General of the Navy.  
 Tenth Census U. S. (vols. 1 to 16 inclusive, maps and compendium).  
 Treasury Cattle Commission, 1882.  
 United States Medical and Surgical Directory, War Department.

## REPORTS—MISCELLANEOUS.

American Public Health Association\* (vols. 1 to 11 inclusive).  
 Diphtheria in Michigan, 1884.  
 Health Report City of Boston, 1882, '83.  
 Health Report City of Brooklyn, 1883.  
 Health Report City of New York, 1867, '68, '71, '72, '73, '74, '79.  
 Health Report District of Columbia, 1879, '80, '81, '82, '83.  
 Health Report of Ontario, 1882, '83, '84.  
 Master Plumbers' Association.  
 Medical Education and Medical Colleges in the United States and Canada, 1865 to 1885.  
 Paris Electrical Exhibition, 1881.  
 Proceedings National Conference State Boards of Health.  
 Proceedings of the New Orleans Sanitary Conference, 1884.  
 Prize Essays, American Public Health Association, 1886.  
 Public Water Supply, City of Memphis, 1886.  
 Quarantine and Operation of Louisiana Board of Health.  
 Sanitary Convention Proceedings in Michigan, 1880 to 1886.  
 Sanitary Association, Ohio, 1880.  
 Sanitary News, Chicago.  
 Ship's Medicine Chest, Hand-Book, Marine Hos. Service.  
 Statutes of Manitoba, 1883 to 1885.  
 St. Louis Health Commissioners, 1885 and 1886.



The Laws of Michigan Relative to Public Health, 1883.  
The Report of National Conference on Disinfectants.  
Bible.  
City Directory.  
Johnson's Encyclopedia.  
Medical Dictionary, Dungleson.  
Pronouncing Medical Dictionary, Thomas.  
Scrap Book.  
State Gazetteer, 1882, '83.  
United States Postal Guide.  
Webster's Unabridged Dictionary.

### THE BOARD.

The members of the Board and terms of office are as follows:

Samuel R. Seawright, M. D., President; term expires February, 1889.

Wm. A. Fritsch, M. D., Evansville; term expires February, 1889.

Samuel S. Boots, M. D., Greenfield; term expires February, 1887.

Wm. Lomax, M. D., Marion; term expires February, 1887.

The term for which Charles N. Metcalf, M. D., of Indianapolis, was elected Secretary expired on November 3, 1885. At the first regular meeting of the Board held in November, 1885, he was unanimously reelected to the position for the ensuing four years. His term will expire November 3, 1889.

At a special meeting held December 18, 1885, the Secretary called the attention of the Board to the death of Thaddeus M. Stevens, M. D., the first Secretary of the Indiana State Board of Health, and the author of the bill creating this department of the State government. Drs. Lomax, Boots and Metcalf were appointed a committee to draft resolutions to the memory of Dr. Stevens. At a meeting held February 18, 1886, Dr. William Lomax, chairman of the committee, reported the following resolutions, which were adopted:

MR. PRESIDENT: On returning home from the northern part of the State last month I found a letter from the Secretary dated December 18, 1885, saying: "At the meeting yesterday you were appointed chairman of a committee to report to the

Board at its next meeting suitable resolutions upon the death of Dr. Thad. M. Stevens. The other members of the committee, Dr. Boots and myself, desire to leave the whole matter to you, as you were one of his personal friends."

Under these circumstances I have felt it a duty to the memory of the deceased to briefly present a few historical facts pertaining to the incipency and evolution of that which he regarded as the great work of his life—a health department as a municipal institution of the State. For something like ten years, as may be seen by reference to the transactions of the State Medical Society, Dr. Stephens devoted the most assiduous and untiring efforts to secure the enactment of a law providing for a State Board of Health. He made labored researches, wrote papers presenting the enterprise in as favorable a light as possible at the annual meetings of the State Society, hoping to awaken an interest in the profession, and, through the physicians, to enlist public interest to the extent of reaching the halls of legislation. This required years of patient and indefatigable labor, not only in presenting its intrinsic importance, but in organizing district societies throughout the State, by means of which the matter could be brought directly before the minds of the people, where he could present the project with all the force of thought and argument that he could throw into it. This organization of societies under his supervision required time to visit different portions of the State, not only consuming much of his time, but involving no small outlay of expense. He attended upon the sessions of the Legislature during this period, faithfully urging the claims of his favorite project upon the consideration of that body, but never succeeded in obtaining his laudable purpose of securing the law until the session of 1881.

A popular feeling had been aroused in the State demanding the measure. The Doctor furnished the Legislature with the draft of a bill, which culminated in the law creating this Board.

A retrospect of the developing history of the Bureau would lead us back through the successive stages of its tardy progression to its incipency as a projected theory in the brain of the lamented Thad. M. Stevens.

When the law was enacted and the Board was to be created, the Governor wisely selected its projector and champion to lead

in shaping and systematizing the complicated work to be inaugurated. He was elected Secretary, and at once gave himself to the difficult task of planning and arranging the work, constructing forms for tabulating and collating statistics of the various orders of information to be acquired, issuing circulars, instructing an undrilled army of subordinates in the various duties required to evolve order out of an immense chaos of important vital material, heretofore overlooked and unrecorded, provide for all of the diverse interests comprehended in the broad fields of hygiene, and utilize every available force into an efficient system for maintaining and improving the public health. The task was performed with commendable wisdom and ability, and the entire organization put in fair running order.

The department began to assume the character of a fixture in the municipal code of the State. It was yielding its contributions of vital and mortuary statistics to the cumulating stores of facts and observations in its appropriate sphere. Its auguries for usefulness were encouraging. A career of success and public benefit brightened the sanguine hopes of its progenitor. But unfortunately internal discussion arose in the cabinet of his co-laborers, by which the efficiency of the Board was impaired, and its honor lamentably tarnished. On the 15th of March, 1883, this wrangle resulted in deposing the Secretary, a most ungenerous, not to say illegal, injustice. The Board unquestionably has the right to depose its Secretary "for just cause," but in fairness and decency it should notify him of the charges preferred, and give him an opportunity for defense. This was not done in the case of the deposed Secretary. At the time of this arbitrary and tyrannical action, and in the face of an expressed purpose on the part of the deposed to litigate the action of the Board, they (the Board) proceeded to elect another to succeed him, who, on invitation, came in by "force, without process of law," took possession of the office. (Transactions Indiana State Medical Society, 1883, p. 70: *Stevens v. State Board of Health*, where his course is fully vindicated.) While the right to depose the Secretary, "for just cause," is vested in the Board by the statute, the exercise of the right does not disturb his relation as a member of the body. It only relieves him of the duties and deprives him of the emoluments of the office.

Dr. Stevens held his commission from the Governor as a

2—*Bd. of H.*

member of the Board, the same as the other members. He was elected Secretary by the Board. Deposing him from the Secretary's office could not in the least impair his right as a member of the Board. The membership of the Board could not by this act be reduced in numbers. The Secretary, by virtue of his office, becomes a member of the Board. Dr. Stevens had not resigned at this time, and I am not aware that he ever did so. Then the Board would contain, by this act, six members, whereas the law positively makes it consist of but five. At the time, the Doctor fully intended to litigate the action of the Board, but subsequently, on more mature reflection, seeing the growing disrepute into which the Board was rapidly drifting, and the waning confidence of the people in it, as an institution of any worth, became satisfied that such litigation would endanger the repeal of the law. The law had cost him the labor and study of many years of the better part of his life, and he believed, if properly administered, it was destined to work great good for the health of the community. This induced him to submit to the injustice of the Board, rather than jeopardize the uncertain permanency of the law.

It was by no means a compromise of the proprieties or improprieties of his official conduct which had been charged as a justification of the action of the Board in the case.

After premising the foregoing brief history, I have subjoined the following resolutions:

1. *Resolved*, That we have learned with profound sorrow of the death of Thaddeus M. Stevens, M. D., first Secretary of this Board, whose relation to its inception, development, appointments, workings and early history, designate him as the father of the Board, and vindicate a noble, generous spirit of unselfish philanthropy in promoting all measures which he deemed of vital importance to the public health.

2. *Resolved*, That his labors and achievements in the cause of sanitary science justly entitle him to a high rank in the role of public benefactors.

3. *Resolved*, That in his death the medical profession has lost a faithful member and worker, and the community a devoted friend.

4. *Resolved*, That we hereby tender to the widow of the deceased our fervent sympathy and condolence in her sad bereavement.

5. *Resolved*, As an act of respectful memory to the deceased that the foregoing brief history and resolutions pertaining to the death of the late lamented Secretary be entered upon the records of this Board.

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## COUNTY BOARDS OF HEALTH.

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Each county in the State has a Board of Health, in accordance with an act creating such boards, approved March 7, 1881. The Board of County Commissioners constitute a Board of Health in each county, and "shall, annually, in the month of January of each year, complete their organization by the election of a Secretary, who shall be a physician." Such Secretary, by virtue of his office, is the health officer of the county in which he has been elected, and is fully empowered to enforce all statutes relating to the protection of the public health. The County Boards of Health are required to "act in conjunction with the State Board of Health, and it shall be the duty of the Secretary of such County Boards, at least once in each year, and as often as may be deemed necessary by the State Board of Health, to report such facts and statistics as may be required under instructions from and according to forms and blanks furnished by said Board."

It is also their duty, "under the direction of the State Board of Health, to promulgate and enforce such regulations for the preservation of public health and the prevention of epidemic and contagious diseases as may be deemed advisable by them, and any person or persons, or the officers of any corporation neglecting or refusing, after having been notified in writing to comply with the requirements of such regulations, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than five dollars nor more than twenty-five dollars."

The State Board of Health adopted a rule requiring county health officers to make quarterly reports (instead of annual) on blanks provided for that purpose, of all marriages, births, deaths, contagious and infectious diseases occurring in the counties which they are serving. It is also their duty to de-

mand of the physicians practicing in their respective jurisdictions to report to them all such births, deaths, contagious and infectious diseases coming to their personal knowledge within fifteen days after their occurrence. Within the year these officers (with a few exceptions) have made regular quarterly reports with commendable promptness, and in many counties they are deserving of much praise for the good sanitary work which they have done. As soon as elected they should thoroughly acquaint themselves with the sanitary laws of the State, and also carefully study and intelligently interpret the rules and regulations issued by the State Board and acquire a strict compliance with the same. It is also their duty to seek for the cause of epidemic and contagious diseases, and acquaint the people with their nature and the best means of prevention, and make every effort possible to educate the masses in the latest methods employed for the preservation of the public health. There are a few, however, who are very derelict in the performance of their duties, and seem to take no interest in sanitary work, and give but little if any attention to the demands of the office. It is only when a great emergency arises and the citizens of their respective localities demand that something be done to relieve them of an intolerable nuisance or to prevent if possible the spread of an epidemic that they make an apparent effort to perform the work devolving upon them as officers of the law. Officers of this character have been the cause of opposition to the State Board of Health that has existed since its formation. The law should be amended so that this class could either be removed or fined when they fail properly to do their work. Some give as an excuse for their manifest indifference that they are poorly compensated for the work required. All certainly know what salary they are to receive before entering upon the duties of the office. This being true, we suggest that these men should not be excused for non-performance of duty upon the plea of insufficient remuneration. The duties of a health officer are sacred and extend to the home of every citizen, and require the exercise of intelligence, good judgment and a knowledge of human nature, and should not be assumed unless they can be conscientiously performed. Last December, shortly before the time for the election of health officers, we issued the following circular letter, addressed to the various Boards of

County Commissioners, hoping to impress upon them the necessity of sufficiently renumeration these officers for the services required. We also desired, if possible, to bring about a reformation in the few counties where they have been in the habit of allowing the position to be filled by the lowest bidder without any regard whatever to the qualifications of the applicant. This latter policy is an evil one, and should be abandoned wherever practiced.

INDIANAPOLIS, Dec. 21, 1885.

We would respectfully call the attention of County Commissioners to the fact that the practice of selecting county health officers from the lowest bidders is wrong in principal and often hurtful in its effects. This practice has been resorted to in some counties and in almost every instance the standard of the public service has been lowered. County Health officers should be men of intelligence, whose professional abilities are of the highest order, whose opinions are sought and acted upon, and who are respected by their professional associates and the public generally. We therefore suggest that where the present health officers have given evidence of such qualifications, the public good demands their re-election at salaries commensurate with the labor required.

S. R. SEAWRIGHT, M. D.,  
President.

C. N. METCALF, M. D.,  
Secretary.

#### CITY AND TOWN HEALTH OFFICERS.

City and town Boards of Health are subordinate to the County Board of Health of the county in which they are situated, and must execute the regulations of the County Board within their respective municipalities, and have immediate supervision of the sanitary condition of the town and the general health of its inhabitants.

Town Boards of Health are authorized, and it is their duty, to make regulations additional to the County Board regulations, as special conditions may demand, not incompatible with law.

The town and city health officers should not only attend

specially to the health affairs of their respective municipalities, but should, in a general way, aid the county health officer by reporting to him such pertinent facts of importance as may come to their knowledge in their respective vicinities, and county health officers should be diligent in devising and executing measures for obtaining correct information touching the sanitary condition of, and the health of the people in, all parts of their respective counties, including that most remote from their officers and least accessible.

We call the attention of city councils and town boards to the following resolutions passed by the Logansport City Council during the prevalence of an epidemic of diphtheria in that city. We urge the other city and town councils and boards of the State to pass an ordinance (instead of resolutions, which are in force only for a stated period) in their respective cities and towns, embracing the features of these resolutions, so worded as to be applicable to all epidemic diseases. The action of the Logansport Council was praiseworthy and is deserving of emulation; other legislative bodies of like character in the State can well afford to follow its example:

An act passed by the City Council of Logansport, Indiana, October 6, 1886.

WHEREAS, The Board of Health of this city have asked that this Council take some action in the matter of assisting them in banishing from our city diphtheria; therefore, be it

*Resolved*, That there shall be appointed by the Board of Health one intelligent, active and judicious person in each voting precinct of the city, who shall be known as health officers, who shall be duly sworn to faithfully and impartially perform the duties as herein set forth, and who shall have police powers conferred upon them. The duties of such health officers shall be to see that all streets, gutters, alleys and public places within his precinct are put in a clean and healthy condition at the very earliest possible time, by the removal of all rubbish, stagnant water, weeds, or anything else that in the opinion of the Board of Health may in any way be detrimental to health, and to this end they shall have power to employ such persons and teams as may be actually necessary to the speedy removal and abatement of all nuisances in their respective districts. In addition to thoroughly cleaning, as above stated, they shall cause the sprinkling of lime, copperas, or other disinfectants, upon



such portions of the streets, alleys, gutters and public places as may be deemed necessary by the Board of Health. They shall see that all privy-vaults, cellars, yards, hog-pens and other places upon the lots, lands, or houses of any and all persons within their districts are thoroughly cleansed and disinfected, and to that end shall give immediate notice, in person or in writing, to the owner or occupant of any house, lots or land, to abate all nuisances found upon their premises, which in the opinion of the Board of Health may be in any way or manner detrimental to the health of any citizen. Upon the failure of any person or persons to abate any nuisance upon the premises owned or occupied by them, within twenty-four hours after notice to so abate, they shall file a complaint against such person or persons before the proper officers and shall then proceed to abate such nuisance, keeping an account of the cost of the same, which amount of said costs shall be reported to the City Clerk, who shall cause the same to be charged upon the city tax duplicate against the real estate, and by the City Treasurer collected as other taxes are collected. The term for which the health officers as herein provided, or appointed, shall not exceed thirty days, and the compensation shall be three dollars for each day's services actually performed. Any person who shall be appointed, as herein provided, to serve as health officer who shall fail or neglect to perform the duties assigned to him, as herein set forth, thoroughly, energetically and intelligently in every particular, shall be dismissed and another person appointed to fill his place.

*Resolved*, That the above resolution, together with the names of the health officers appointed, be published in the city papers.

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### REVISED RULES.

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Early in the year the Board of Health revised the rules and regulations which had been in force for several years. The object of the revision was to simplify and to make them as easily understood as possibly. Heretofore there had been no

regulations governing the transportation of dead bodies. The Board deemed it essential to pass rules regulating such shipments, and especially of bodies dead from contagious and infectious diseases. In the past many of our citizens had been victims to such diseases, as bodies were allowed to be shipped and brought within our borders without restriction (except those dead from small-pox and yellow fever).

Therefore the rules were amended in this particular and a strict compliance with the same was demanded. We append rules beginning with number five. The first four will be found under subject "Schools and School-houses."

#### DISEASES DANGEROUS TO THE PUBLIC HEALTH.

**RULE 5.** Whenever any householder shall know or suspect that any person within his or her family, or who may be temporarily residing with him or her, is sick with small-pox, scarlet fever, diphtheria, cholera, or any other disease dangerous to the public health, he shall immediately give notice to the health officer within whose jurisdiction he may reside. In all cases where diseases dangerous to public health are reported, the officer within whose jurisdiction the disease occurs shall at once send one of the "Preventable Disease Circulars" to the infected household.

**RULE 6.** Whenever any physician shall know or suspect that any person whom he is called to visit has small-pox, scarlet fever, diphtheria, cholera, or any other disease dangerous to the public health, such physician shall give notice immediately, together with the locality and full description of the case, to the local Board of Health within whose jurisdiction the disease or diseases may occur.

**RULE 7.** It shall be the duty of the attending physician to see that the proper flags of warning, as provided for in Rule 17, under the instruction of the local health officer, be placed in proper position, according to said rule. It shall be his further duty to give all persons affected with contagious or infectious diseases coming under his care, and those having charge or care of them, notice of the rules and regulations of this Board pertaining to all such diseases.

(Copies of these rules and the necessary flags will be furnished to him by applying to the county health officer.)

**RULE 8.** No parent, guardian or other person having charge or control of any child or children, shall allow or permit any such child or children to go from any house or building infected with small-pox, scarlet fever, diphtheria, measles, whooping cough, cholera, or other contagious or infectious diseases, to attend any church, or public meeting or place of amusement, or to travel in any street car or public vehicle.

**RULE 9.** No person shall be permitted to go from any house or building infected with scarlet fever, diphtheria, cholera, small-pox, or other contagious or infectious diseases dangerous to public health, to attend any church, public meeting or place of amusement, or to travel in any street car or public vehicle.

**RULE 10.** No person recovering from any infectious disease, dangerous to public health, shall be permitted to appear upon the public streets or public highway, or in any public place, until all danger from contagion by reason of such disease is passed and a certificate from the local health officer to that effect placed in the hands of those in authority.

**RULE 11.** The room in which there has been a case of infectious disease dangerous to public health must be thoroughly disinfected immediately, and all infected clothing, bedding, carpets, furniture, etc., either cleaned and disinfected or destroyed. All such work to be done under the supervision of the health officer.

#### BURIAL.

**RULE 12.** In all cases of death from any disease dangerous to public health the body shall be placed in a coffin as soon as possible, and the coffin securely closed and never again opened.

#### SMALL-POX.

**RULE 13.** No person will be allowed to leave any house, building or premises infected with small-pox, unless he has heretofore had the disease, and then he must make a complete change of clothing, and have a permit and instructions from the local health officer.

**RULE 14.** Each day brings evidence of the increasing danger and virulence of this loathsome disease, and also increased evidence of the power of vaccination to save from its ravages

all persons who avail themselves of its protective influences. It is, therefore, the duty of all unvaccinated persons to be vaccinated immediately.

RULE 15. It is the duty of all persons to protect themselves and the public against small-pox, and in all cases where an exposure to small-pox has occurred, or where an epidemic of small-pox is threatened, it shall be the duty of the Board of Health within whose jurisdiction such exposure shall have occurred, or danger of such an epidemic ensuing, to compel a vaccination or revaccination of all exposed persons, and any one refusing or failing to comply with such order shall be liable to the penalties of section 4994, Revised Statutes.

RULE 16. As adopted by the State Board of Health, October 18, 1882.

"All vaccinations must be with *non-humanized virus*. But no such virus shall be bought or sold to be used by physicians in vaccinating except such virus has been taken from the original package, as obtained from the producer of said virus, and such original package of one point or more, or one scab or more, shall be bought or sold in sealed envelopes, having upon such envelopes the name of the proprietor of the farm where the virus is produced, and also the date when such virus was taken from the cow." The only exception to this rule that would be recognized by this Board would be in the event that small-pox was prevalent in epidemic form, and the health officer should certify to the impossibility of obtaining such virus in sufficient quantity, and also as to the purity of the humanized virus to be used in lieu of the bovine virus.

#### FLAGS.

RULE 17. Upon notice being given of cases of small-pox, scarlet fever, diphtheria, or cholera, the health physician shall cause a flag, not less than twelve inches square, to be fastened to the front door or other conspicuous place of each building where such sickness prevails. The flag for small-pox shall be red, and shall have printed thereon, small-pox. For scarlet fever and diphtheria, shall be yellow, and have scarlet fever or diphtheria printed thereon in large letters. For cholera, a black flag, with cholera printed in white letters, shall be used. Any person causing the removal of said flags, without the authority of the local

health officer, shall be subject to the penalty as provided by section 4994, Revised Statute.

RULE 18. It is hereby made the duty of every person who may have charge of any one who has died of small-pox to cause the body to be interred within twelve hours after the death of any such person. There shall be no public demonstration at the funeral of any person who has died from small-pox, scarlet fever, diphtheria or cholera.

RULE 19. City and town health officers shall record all returns of births, deaths and contagious diseases, and they shall monthly turn over to the county health officer the original birth, death and contagious disease returns. The county health officer, after recording these original returns, shall return them to the city or town health officer whence they were received, who will preserve them for future reference.

RULE 20. County, city and town health officers shall take cognizance of all violations of the Revised Statutes in reference to diseased animals, and whenever any such are found, at once cause a rigid enforcement of the laws, and they shall in all cases of infectious diseases in animals occurring within their jurisdiction, render prompt assistance in arresting and stamping out the malady.

RULE 21. All Boards of Health of counties, cities and towns should cause to be made a thorough sanitary survey of their respective jurisdictions, for the purpose of ascertaining the existence of conditions detrimental to the public health, including in such survey swamp lands, stagnant ponds, imperfect drainage, sewerage, cess pools and water closets; the construction, ventilation and drainage of public buildings, school houses, prisons, hospitals, eleemosynary institutions, and such nuisances as might prove detrimental to public health.

#### SUGGESTIONS CONCERNING QUARTERLY REPORTS.

In view of the fact that quarterly reports from county health officers to this office so frequently contain errors, it is hoped that the following suggestions will be *carefully read and heeded*:

## BIRTH RETURNS.

The first column of the birth blank, "number of births," must correspond to the number of mothers, and is the same as "number of children," unless plurality births occur, in which case there are more children than mothers or father.

In "grouped ages of parents," care must be taken that the number of fathers and mothers are the same. So also in "nationality of parents." It will thus be seen that "number of births" and number of fathers and mothers should, in all cases, be the same, while the number of children may be greater on account of plurality births.

Please report "still births" on the *birth blanks only* and not on the death blanks.

When a woman is delivered of a child at or after the twenty-eighth week of utero gestation, it must be returned as a birth; under the twenty-eighth week it is an abortion or miscarriage, and does not require a return.

## DEATH REPORTS.

Five items are to be considered in filling the death blanks, viz.: Months, color, nationality, condition and grouped ages of decedents.

The number of males and females must be the same in all the items, *e. g.*: If there are 16 males and 14 females in months, the same must occur in all the other items. Before a report is sent in it should be verified.

*Suggestions as to Death Blanks.*

Physicians and accoucheurs should read the blanks carefully and exercise due care in filling them, as the value of the vital statistics that may be collected by the State Board of Health will depend almost entirely on the fidelity and accuracy of physicians and accoucheurs in making their returns to the health officers.

In reports of diseases and causes of death, the names of many diseases and causes of death are not sufficiently definite to be of any service whatever.

The following will serve to illustrate :

"Abscess." Of what part?

"Accident." What kind?

"Amputation." Of what, and what for?

"Asphyxia," or "Suffocation." From what cause?

"Bowel Complaint." Was it Diarrhea, Dysentery, or what disease?

"Brain Disease." What kind?

"Convulsions." Of what kind? From what cause?

Deaths from "Drowning," "Poison," "Injuries," "Gun-shot," etc., should state whether accidental, suicidal or homicidal.

#### MARRIAGE REPORTS.

Marriage return blanks are not so complicated and less liable to be incorrect. Care need only be taken to have the same number of grooms and brides, both in grouped ages and nationality.

County health officers shall supply the Clerk of their respective counties with marriage return blanks, and when said County Clerk issues a marriage license, he shall deliver to the party procuring such license a blank marriage return, and when such return shall have been filled out and returned to the County Clerk he shall deliver it to the Secretary of the County Board of Health.

All persons authorized to solemnize matrimony shall fill out properly a return of marriage of each marriage solemnized by them, and return the same with the license and certificate to the County Clerk.

# RULES FOR THE GOVERNMENT

—OF—

## STATION AGENTS AND BAGGAGEMEN

—IN—

### RECEIVING AND TRANSPORTING DEAD BODIES.

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RULE 1. The transportation of bodies of persons who have died from small-pox, Asiatic cholera, typhus or yellow fever is strictly forbidden.

RULE 2. From November 15 to March 1 all other dead bodies may be transported without restriction, except those who died of diphtheria, scarlet fever, typhoid fever, erysipelas, and measles, which must be wrapped in a sheet thoroughly saturated with a solution of chloride of zinc ( $\frac{1}{2}$  pound chloride of zinc to a gallon of water), or one ounce of corrosive sublimate to a gallon of water, and encased in an anti-septic interment sack, hermetically sealed, and placed in a coffin which must be inclosed in a tight wooden box. The coffin must be surrounded by sawdust, saturated with a solution of chloride of zinc, or corrosive sublimate, the same as above.

RULE 3. From March 1 to November 15, all bodies not having died from diseases specified in Rules 1 and 2 presented for transportation, must, in addition to being placed in a coffin, be inclosed in an encasing sack, hermetically sealed.

RULE 4. No person or article which has been exposed to the contagion can accompany the body.

RULE 5. Every dead body must be accompanied by a physician's certificate of death, and a certificate from the shipping undertaker that the body has been prepared for transportation in accordance with the rules of the Indiana State Board of Health.



**FORMS OF CERTIFICATES REQUIRED BY THE BOARD.**

**PHYSICIAN'S CERTIFICATE OF DEATH.**

I hereby certify to the best of my knowledge and belief that  
 .....aged.....years.....months.....days, died of .....  
 .....M. D.

Residing in.....Co., Indiana.  
 .....188....

I hereby certify that the body of the person named in the foregoing physician's certificate has been prepared by me for transportation in accordance with the rules of the State Board of Health.

....., Undertaker.

Residing in.....County, Indiana.

In the enforcement of these rules it must be understood that the intention is that no dead body shall be received which may be the means of spreading any contagious or infectious disease.

Therefore, in receiving any dead body which has been shipped from within either Illinois, Kentucky or Michigan, the rules of those State Boards of Health must be observed. Ohio having no State Board of Health the rules of this Board will govern all cases from said State.

All dead bodies presented by connecting lines and coming from beyond the States mentioned need only to be accompanied by a physician's certificate, clearly setting forth that the disease of which the person died was not of a contagious or infectious character.

The rules and regulations made by the State Board of Health and adopted by the various local Boards in accordance with powers given by act creating State and local Boards of Health, etc., are laws to be obeyed by every individual in the State.

All prosecutions for violations of the statute law, or the rules of local Boards of Health, should be instituted by the several prosecuting attorneys of this State, upon information of such local Boards.

The above rules and regulations are hereby adopted, and all rules and regulations heretofore promulgated by circular, card or pamphlets, or through newspaper publications, in conflict with the foregoing, are hereby revoked.

By order of the Indiana State Board of Health.

S. R. SEAWRIGHT, M. D.,

*President.*

C. N. METCALF, M. D.,

*Secretary and Executive Officer.*

November 5, 1885.

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## SANITARY AUTHORITIES AND ASSOCIATIONS.

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The following comprises a list of American boards of health and sanitary associations, together with the names and addresses of their executive officers. Thirty-two States have organized a board of health, and no State has ever taken a backward step and repealed the law which created one. Within the year the Legislature of Ohio passed a law establishing a board of health in that State. This Board has organized by electing officers, and is now in full operation. Within the year the National Board of Health has been obliged to close its doors and drop out of existence through the failure of Congress to appropriate funds to carry on the work of the department. It is generally understood that this result was brought about by those interested in the success of the United States Marine Hospital service :

### NATIONAL BOARDS OF HEALTH.

United States Marine Hospital Service: Dr. John B. Hamilton, Surgeon General, Washington, D. C.

American Public Health Association: Dr. Irving A. Watson, Secretary, Concord, N. H.

Sanitary Council of the Mississippi Valley: Dr. John H. Rauch, Secretary, Springfield, Ill.

National Conference of State Boards of Health : C. P. Conn, Secretary, Concord, N. H.

STATE BOARDS OF HEALTH AND SECRETARIES.

STATE.	SECRETARIES.	RESIDENCE.
Alabama . . . . .	Jerome Cochran . . . . .	Montgomery.
Arkansas . . . . .	J. A. Dibrell, Jr. . . . .	Little Rock.
California . . . . .	G. G. Tyrrell. . . . .	Sacramento.
Colorado . . . . .	H. K. Steele . . . . .	Denver.
Connecticut. . . . .	C. A. Lindsley . . . . .	New Haven.
Delaware. . . . .	E. B. Frazer . . . . .	Wilmington.
Georgia . . . . .	V. H. Taliaferro . . . . .	Atlanta.
Illinois . . . . .	John H. Rauch . . . . .	Springfield.
Indiana . . . . .	Charles N. Metcalf . . . . .	Indianapolis.
Iowa . . . . .	J. K. Kennedy . . . . .	Des Moines.
Kansas . . . . .	J. W. Redden . . . . .	Topeka.
Kentucky. . . . .	J. N. McCormack . . . . .	Bowling Green.
Louisiana . . . . .	S. S. Herrick. . . . .	New Orleans.
Maine . . . . .	A. G. Young. . . . .	Augusta.
Maryland. . . . .	C. W. Chancellor. . . . .	Baltimore.
Massachusetts. . . . .	S. W. Abbott. . . . .	Wakefield.
Michigan . . . . .	Henry B. Baker . . . . .	Lansing.
Minnesota . . . . .	C. N. Hewitt. . . . .	Red Wing.
Mississippi . . . . .	Wirt Johnson . . . . .	Jackson.
Missouri . . . . .	George Homan. . . . .	St. Louis.
New Hampshire. . . . .	Irving A. Watson . . . . .	Concord.
New Jersey . . . . .	Ezra M. Hunt . . . . .	Trenton.
New York . . . . .	Alfred L. Carroll. . . . .	Albany.
North Carolina . . . . .	Thomas F. Wood. . . . .	Wilmington.
Ohio . . . . .	C. O. Probst . . . . .	Columbus.
Pennsylvania . . . . .	Benjamin Lee . . . . .	Philadelphia.
Rhode Island. . . . .	Charles H. Fisher . . . . .	Providence.
South Carolina . . . . .	Henry D. Frazer . . . . .	Charleston.
Tennessee. . . . .	J. Berrien Lindsley. . . . .	Nashville.
Texas . . . . .	R. M. Swearingen . . . . .	Austin.
West Virginia. . . . .	Thomas A. Harris . . . . .	Parkersburg.
Wisconsin . . . . .	J. T. Reeve . . . . .	Appleton.

CONVENTION OF COUNTY HEALTH OFFICERS.

Acting upon the belief that much good might be accomplished by a convention of town, city and county health officers, a call was issued for such a convention, which was held in the city of Indianapolis, February 18, 1886. As will be seen by the following proceedings, quite a good attendance was secured.

Many others would have attended had they not been prevented by professional duties; others could not attend because of the distance necessary to be traveled and the expense involved. A commendable zeal and interest in their work characterized those present. It was fully demonstrated that in all

matters pertaining to the prevention and spread of disease these officers are fully alive to their duties and to the interests of the people whom they serve. From their deportment and expressions they feel that they owe it to the public to *prevent* as well as to *cure* disease.

Following are the proceedings in full:

THE FIRST STATE CONVENTION OF THE HEALTH OFFICERS OF INDIANA  
WAS HELD AT ENGLISH'S HOTEL, INDIANAPOLIS, ON THE 18TH OF  
FEBRUARY, 1886.

Among those in attendance were the following:

Arwine, J. S.....	Columbus.
Bliss, M. G.....	Crown Point.
Booth, A. D.....	Noblesville.
Boots, Samuel S.....	Greenfield.
Bradbury, A. B.....	Muncie.
Buckingham, G. B.....	Brookville.
Burke, G. W.....	New Castle.
Burket, C. W.....	Warsaw.
Coppock, Anson.....	Goodland.
Dickey, A. S.....	Tipton.
Field, M. H.....	Indianapolis.
Fritsch, W. A.....	Evansville.
Gillespie, Wm.....	Rising Sun.
Hamilton, A. A.....	Marion.
Hibberd, James F.....	Richmond.
Hillis, J. C.....	Darlington.
Huston, A. S.....	Pendleton.
Jones, Geo. S.....	Covington.
Kennedy, T. C.....	Shelbyville.
Kessenger, C. A.....	Martinsville.
Lawson, W. T.....	Danville.
Lomax, Wm.....	Marion.
Long, R. C.....	Pierceton.
Metcalf, C. N.....	Indianapolis.
Morris, C. C.....	Rockville.
Rogers, E. A.....	Laporte.
Sawyer, Frank M.....	South Bend.
Schell, C. W.....	Lafayette.

Seawright, Samuel R.....	Lafayette.
Smith, W. H.....	Rushville.
Shields, J. M.....	Seymour.
Spaulding, Joseph.....	Lafayette.
Stuckey, J. M.....	Gosport.
Thorne, J. C.....	Kokomo.
Wetherill, R. B.....	Lafayette.

- Commissioners Crump and Taylor, of Boone; Walker, of Rush; Hon. John W. Holcombe, Superintendent Public Instruction, Indianapolis.

The Convention was called to order by Dr. Samuel R. Seawright, President of the State Board of Health, who spoke as follows:

## CONVENTION OF TOWN, CITY AND COUNTY HEALTH OFFICERS.

### ADDRESS OF PRESIDENT SEAWRIGHT.

*Gentlemen of the Convention:*

For myself and in behalf of the State Board of Health I thank you for your presence here to-day.

The Legislature, by an act in force March 7, 1881, created and established a Board known under the name of the State Board of Health, and gave such a Board general supervision of the interests of the health and life of the citizens of the State, and made it especially the duty of the Board to study the vital statistics of the State, make sanitary inspection respecting the cause of disease; and especially of epidemics, the cause of mortality, and the effects of location, employments, conditions, ingesta, habits, and circumstances on the health of the people. In addition to all this the Board, when required, or when they deem it best, must advise officers of the Government or other State Boards in regard to the location, drainage, water supply, disposal of excreta, and the heating and ventilation of public institutions or buildings.

The field to be occupied and worked is large, both as to territorial extent and the subjects to be investigated, and the As-

sembly wisely provided in the same act for a competent corps of assistants in each county in the State. These assistants are known and designated by the State as Boards of Health. Their powers and duties are defined. These Boards consist of the Trustees of each town and the Mayor and common council of each incorporated city, except where a regular constituted Board of Health by ordinance of such city now exists, or may hereafter be created, and the Board of County Commissioners of each county.

The Boards each elect a Secretary, who in every case must be a physician. With the duties of these Boards you are all familiar. They are the eyes of the State Board, constituting a veritable army of observation and occupation of not less than two thousand in number. To increase the effectiveness of the force and better fulfill our mission, the State Board have invited you to meet us in convention to discuss generally any and all questions germane to our and your organization and work, and we invite and urge you, if need be, to active participation in the work of the convention. It is yours as well as ours, and we trust that great good will come to our people from the suggestions which may be made, and the discussions which may take place here. May we not hope that the results of this first meeting in convention of the health officers of the State will be so large as to attract the attention of our lawmakers to the expediency of so amending the existing legislation of the State on the subject of health, so that provision may be made for an annual convention of those whose duties by law are to preserve the lives and health of our people, and the expenses of the members to be paid from the public treasury. It is manifest that our people are keenly alive to the value of human life and health, and are willing to do anything that will advance the same, regardless of expense, and are showing their intelligent appreciation of all that science may do in preserving life, as well as curing disease.

Medicine is not an exact science, yet it is but to affirm that which we all know to say that it is better understood to-day than ever before in the history of the world.

Determined men are ransacking the wild domain of nature, hurrying along her great halls, threading their way through her bewildering labyrinths, knocking at every door, and anxiously determining that she shall yield up her every secret

touching the cause, prevention and cure of disease; and as a result, health is better assured, life is more cheerful, and grows longer. I am not an alarmist, but it may not be amiss to remind you that the scourge that devastated Spain and other countries of the old world last year is now laying waste some of the islands of the sea, and may come upon us this year with unwonted fatality, and fill all our land with tears.

The people look to us to protect them, as far as may be in our power to defend them against such a calamity.

If, then, by any means we can stay or mitigate the "pestilence that walketh in darkness, and the destruction that wasteth at noon-day," we shall feel the pleasure that comes from duty well done, and shall approve ourselves to the people of the State as servants who have sought to realize to them the beneficent intentions of the law.

'The Convention is now ready for business.

#### PERMANENT PRESIDENT CHOSEN.

On motion of Dr. Hibberd, of Richmond, the Convention unanimously elected Dr. George W. Burke, of New Castle, as its permanent President, and that gentleman, upon taking his seat, contented himself with simply thanking the Convention for the compliment they had paid him, and adding that as their time was precious, and business of great importance was to come before them, they had best proceed at once to consider the matters which had called them together.

#### ADDRESS OF SECRETARY METCALF.

At the call of the permanent President Dr. Metcalf, Secretary of the State Board of Health, presented a statement of the objects of the convention. He said:

*Gentlemen of the Convention:*

The purpose for which we have assembled here is the grandest that could engage the attention of any body of men.

To devise ways and means to preserve the health and prolong the lives of our fellow-beings is one deserving the consideration of those who have reached high positions in social and political life. If the discussion of the topics presented,

and the action taken by this body to-day on various matters relating to the public health, should impress upon the minds of the people of this great State the importance which should be given their physical condition, our object will be accomplished, and all will feel repaid for the time, labor and money expended.

From correspondence received and numerous inquiries made at the office of the Secretary of the State Board it was believed that many things pertaining to the duties of the town, city and county health officers were not well understood. After due deliberation, it was decided to call a meeting of the health officers of the State to which all interested in sanitary matters should be invited for the purpose of consultation and to promote unity of action on matters essential to public health, the prevention of epidemics and the most efficient means of instructing the people in sanitation.

It was believed if you met together and could see and talk to each other, that subjects which are now vague would be made clear, and difficulties which impede the progress of your work would be removed that could not be removed by any amount of correspondence or the circulation of volumes of printed matter.

It was thought that more good would result to the service by the discussion of that which had been a source of annoyance to you in your field of sanitary labor than by the reading of elaborately prepared papers.

In accordance with this opinion the Board has submitted a number of topics for your consideration, but you are not expected to confine your discussions strictly to these subjects, although each and every one deserves attention. It is expected that each individual will call the attention of the convention to that part of his official work which has caused him the greatest embarrassment in the performance of his duties. You will be sure to find others here who have encountered similar difficulties. Free and open discussion of this character will elevate the standard of the service, and result in benefit to the public health. The relation of the State Board to the local boards is that of an advisory body. The State Board promulgates rules and regulations, and it is the duty of local boards to see that that they are enforced, as well as the sanitary laws of the State.



It is the duty of the members of the State Board to employ their best energies in making themselves proficient in the study of hygiene and State sanitation, so as to be able to perform their work in a thorough manner, teach the people correctly, and spread among them new and advanced thoughts on these subjects, and at all times be prepared to answer any perplexing questions that may be propounded by local health officers. It is gratifying for us to be able to say that the work which has been accomplished by the local boards has received the cordial and emphatic endorsement of the people and the public press in all parts of the State.

It is the duty of a Health Board to present to the people in a tangible form some of the known causes of disease, and demonstrate in some practical way the relation of cause and effect. When the source from which a disease originates is unquestionably ascertained it should be made known in a clear and concise manner, so that all can understand and profit thereby. If an epidemic of diphtheria can be traced to defective sewerage, or an outbreak of typhoid fever to polluted water, it will do more to make a lasting impression on the minds of the people of the dangers of such contaminations than any amount of theories or assertions that are not sustained by indisputable evidence.

Tracing the cause of a contagious or infectious disease to its source, and demonstrating the fact that it had its origin in filth and bad sanitary conditions is accomplishing a result which will be of lasting benefit to the community and the State. Those engaged in sanitary work should impress the idea upon the people that individually they are responsible for many of the diseases with which they are afflicted, and that they should look to natural causes to explain their physical condition.

The people should be instructed to look carefully after the sanitary condition of their homes and surroundings, such as heating, ventilation, plumbing and sewerage, and above all to watch with jealous care the purity of their water supply, and at all times keep it free from pollution. They should be made acquainted with the best means of preventing and avoiding disease, and have pointed out to them the known causes of the same, and there should be distributed among them some of the established laws of sanitation. This would be teaching them

disease prevention which "comprises whatever aids and perfects the growth of the human frame, preserves and increases its health, augments its vigor, prolongs its existence; also, includes the various methods of lessening and repelling disease and death."

If we will do our work honestly and fearlessly, and intelligently meet all emergencies as they may arise, and let the people know that we have reasons for the faith that is within us, our teachings will be heeded, new powers will be granted, more liberal appropriation will be made to enable us to carry on our work efficiently, and, instead of being retarded in our work and onward career, our influence will continue to advance and grow in the hearts of the people.

The members of the State Board, realizing the fact that they are the servants of the people, will endeavor to conduct its affairs in the interest of the whole State and not in the interest of any individual, clique or locality.

On behalf of the Board, I thank you for your presence here to-day, and hope that the occasion will not only prove a pleasant but a profitable one to you all.

#### PROGRAM OF THE CONVENTION.

Secretary Metcalf further submitted a program which had been prepared by the State Board, embracing topics which it was considered especially important to bring under the consideration of the convention, although it was not desired, he said, that any other subjects in which the gentlemen present might be interested should be omitted simply because they were not on the program.

The subjects suggested for consideration were as follows:

1. Collection of Vital Statistics.
2. Amendments to the Health Law.
3. Promotion of Sanitary Work by Co-operation of Health Officers.
4. Compulsory Vaccination and Humanized Virus.
5. Asiatic Cholera.
6. Typhoid Fever and Its Sanitary Care.
7. Sanitary Oversight of School Property.
8. Uniformity of Quarterly Reports.
9. Compensation of Health Officers.

## COMMITTEE ON RESOLUTIONS.

At the suggestion of Secretary Metcalf, and on motion of Dr. Hibberd, it was resolved that the Chair appoint a committee of three to whom all resolutions be referred.

The committee was named as follows: Drs. Hibberd, Lomax and Rogers.

## THE STATE HOUSE PLUMBING.

Dr. Hibberd said that before the regular program was proceeded with, he had a resolution of a special character which he would like to present for the consideration of the convention. He referred to the plumbing work of the new State House, and he desired to say that although he had no hesitation in presenting it, as it related to a matter of great public importance, he knew nothing whatever as to the allegations made therein. He only knew that they had been made by a gentleman named Hudson over his own name in the *Sanitary Engineer*, a paper which was widely read throughout the United States, and he believed therefore that there should be an investigation of the matters referred to by the State Board of Health, which, he believed, was the proper authority to make inquiry regarding such questions as were involved in the charges of Mr. Hudson. He moved that the following resolution, after it had been read, be referred to the committee which had just been appointed.

WHEREAS, Henry T. Hudson, President Journeymen Plumbers' Steam and Gas Fitters' Association of Indianapolis, has made public declaration that the plumbing in the new State House of Indiana is imperfect and dangerous (see *Sanitary Engineer* of January 28, 1886, page 205), and,

WHEREAS, The Act of March 7, 1881, establishing a State Board of Health, provides that said Board "shall, when required, or when they deem it best, advise officers of the Government, or other State Boards, in regard to the location, drainage, water supply, disposal of excreta, heating and ventilation of any public institution or building;" therefore,

*Resolved*, That it is the sense of this convention that the State Board of Health should at once institute such inquiry as shall determine with certainty whether or not there is anything

defective in the sanitary arrangements of the State House, now under construction, and if anything defective be found in the ventilation, plumbing or drainage of the building or grounds, advise the State House Commission of the nature, extent and consequences of the defect and what should be done to remedy it.

The motion of Dr. Hibberd for a reference of the resolution was adopted, and the convention then proceeded with the consideration of the first topic on the programme, which was

#### THE COLLECTION OF VITAL STATISTICS.

Secretary Metcalf said that a discussion of the subject of collecting vital statistics had been invited because it was felt that it would be an advantage and benefit to the visiting health officers from various parts of the State to compare their methods of gathering the returns of births, marriages and deaths, with a view to overcoming the difficulties that many of them in that department of their work encountered. Some of the Secretaries of the County Board of Health were able to send in very good and full reports, while the reports of others were very poor and defective. He thought if the experience of the health officers present was related that they would all profit by it.

Dr. G. B. Buckingham, of Brookville, said his chief difficulty had been with the older physicians of Franklin County, who were not disposed to look upon the filling up of these blanks as of much importance. He had adopted the plan of giving notice through the papers early in the year that all physicians were desired to send in their reports regularly, and had since been in the habit of sending at least every quarter, and sometimes every three or four weeks, blanks and an envelope, already stamped, to each physician whose report had not been received. Notwithstanding these precautions, however, a few of the older physicians paid no attention to the matter, and when spoken to concerning it would excuse themselves by saying that they forgot to take the blanks with them, and do not get the necessary names, while others would say that they did not want to do work of that kind for which they got no pay. They had also in the county a number of German midwives, most of whom seemed not to realize that it was of any import-

ance that returns of births should be made. Some of the difficulties in making complete returns arose also from the fact that the County Commissioners were disposed to cut the salary of the health officers down to the lowest possible amount.

Dr. J. S. Arwine, of Columbus, said that in his county he had also experienced difficulty in getting returns of births from the German midwives. He was satisfied, moreover, that he was not getting full returns of the deaths, and had found it necessary to prosecute two physicians, while he had threatened others with prosecution if they were not more attentive to the requirements of the law. He had adopted the plan of watching the papers closely for notices of deaths, and keeping a memorandum of it so as to have a check upon the physicians attending each case. He had often been met by the objection from physicians that it was not right to demand something from them for which they received no remuneration. They think they have a right to be paid for making these returns. Still he believed that, on the whole, the physicians were reporting pretty nicely, and were improving all the time. He had never felt it necessary to adopt the plan of sending a stamped envelope, but whenever he could he notified physicians who failed to report.

Dr. C. W. Burket, of Kosciusko County, said he had little complaint to make either of the failure of the physicians to report or of the treatment of health officer by the County Commissioners. They had been disposed to allow a very fair salary for the work that had been done. There had not been much difficulty in getting reports of births. All the physicians seemed to have a pride in making the birth list show up well, but in reporting the deaths they had been a little slow. Some of them seemed to think that it was an injury to their business to report too many deaths. He realized, however, that the rate of mortality ought to be about so much, and he should not be satisfied until he had induced the physicians to make sufficient reports so as to come up to the requirements of the mortality averages.

Dr. Hibberd, of Richmond, said that the remarks of the gentlemen thus far in the discussion, although entirely pertinent to the subject, did not, in his view, touch the most important phase of the question of collecting vital statistics. It should always be borne in mind that the statute makes it a specific

duty of the State Board of Health to supervise the registration of marriages, births, deaths and sanitary statistics to devise methods and furnish blanks for collecting the facts in these affairs, and to utilize the information so acquired for the betterment of the people of Indiana. It is not quite certain what is meant by sanitary statistics in this relation, but probably the regulation to secure reports of diseases dangerous to public health, is at least part of the fulfillment of this injunction. The State Board has been doing this work, but, under present indulgences allowed by the law, is so imperfectly done so as to be worthless for the higher purposes of vital statistics.

According to the published mortality statistics the duration of human life in Indiana was, in 1882, 167 years; in 1883, 133 years, and in 1884, 136 years. This, at a glance, indicates the total unreliability of the collected statistics so far as deaths are concerned. If the service can not be more successfully rendered, it might as well be abandoned. But while we recognize the present imperfections, we must remember that human exertions are not apt to bring about the best results at first efforts, and we must console ourselves with the hope that current labors are educational and that in the end, with some modification of the law, our present experience will enable us to produce results that will answer all the legitimate demands of correct vital statistics. So far as his own county (Wayne) was concerned, he believed that the returns from Richmond were unusually correct, but the difficulty was with the rural districts. He had made some attempt at the enforcement of the law against physicians who failed to report, but, although he had one case in which the facts were perfectly clear, he was advised by the Prosecuting Attorney that it was extremely doubtful if a jury could be impaneled which would convict.

Dr. Jones, of Covington, Fountain County, said that he had brought the cases of some delinquent physicians to the notice of the grand jury, but so far that body had failed to take cognizance of that class of offenses. He had, however, obtained a conviction before a justice of the peace, and the defendant, after being convicted, did not appeal.

Secretary Metcalf, in reply to a question, said that the Attorney General had given an opinion which answered the objection raised by some physicians that the reason they had failed to report in a particular case was that no blanks had been sent

them. If a health officer, immediately after his appointment, notifies physicians of that fact, and sends them blanks, he has complied with the law, and the physicians must thereafter take proper measures to keep themselves supplied with the blanks for carrying out the law and making returns.

Dr. Burket said one of the greatest difficulties he had experienced was in getting returns from persons who only occasionally practiced in some branches of the profession. He had no trouble with physicians proper. They, almost without exception, sent in their reports regularly. But in the case of the old ladies, for instance, who failed to make reports, he certainly did not feel like prosecuting them, and about all that could be done was by moral suasion.

Dr. S. R. Seawright said that health officers could undoubtedly do much in the way of obtaining correct and full returns if they were paid enough to warrant them in spending more time in carrying out the duties of their office. They could then hunt up the physicians who failed to report, and in most cases would succeed.

#### THE STATE HOUSE PLUMBING.

Dr. Hibberd, at this stage of the proceedings, asked to be allowed to call up the resolution asking for any inquiry as to certain alleged defects in the plumbing work of the new State Capitol, in order that the convention might be afforded an opportunity of listening to a statement from a member of the State House Board of Commissioners whom he understood was present.

The request having been unanimously acceded to, Hon. W. B. Seward was introduced. He spoke at length in reply to the allegations in the resolution. To each charge as to the defectiveness and unsanitary character of the plumbing and drainage of the new State Capitol he gave a most positive denial, and said that he knew perfectly well what he was talking of so far as the general plan of that department of the work was concerned, for he had given it close personal attention, and professed to know what were the requirements of good plumbing as well as any one. He said that the whole animus of these charges was found in the fact that the organization, of which this man Hudson was President, was angry at the contractors

for the plumbing work, Parrell & Co., because they did not employ union men, and it was all spite work on his part. For that reason he thought that charges emanating from such a source, and from such motives, ought to be beneath the notice of a body like the present Convention, but he wished it understood that the State House Commissioners offered no opposition to the fullest inquiry, and they would not accept any of the work which they found to be any way defective.

Dr. Hibberd thought that it was of equal importance to the State House Commissioners, the public, the members of future Legislatures and the party making these charges, that an investigation should be had which would establish the truth or falsity of these allegations, and he therefore believed they could not do better than to pass the resolution, thus referring the whole subject to the State Board of Health, a body which had ample authority under the law to make the fullest inquiry.

The resolution was then unanimously adopted.

#### PROPOSED AMENDMENTS TO THE HEALTH LAWS.

Secretary Metcalf read a synopsis of the amendments to the health laws of Indiana, which the experience of the State Board of Health had known to be necessary, and which were to be embodied in the forthcoming annual report of the Board. The proposed amendments were as follows:

To place the diseases of domestic animals in charge of the State Board of Health, with the authority to destroy animals affected with contagious or infectious diseases, such as are liable to be communicated to the human family.

To provide for the appointment by the Governor of a State Veterinarian, whose compensation would be sufficient to command the services of a competent professional man; his service to be performed under the direction of the State Board.

The passage of a law providing for the establishment of abattoirs in each city of the State, and forbidding slaughtering elsewhere. Also, providing that all animals must be critically examined by a competent person, who should be either a veterinary surgeon or an experienced butcher; the animals to be examined for disease before being slaughtered, the inspector being also required to be present during the slaughtering for the purpose of examining the viscera for traces of disease.



A veterinary surgeon is regarded by the Board as preferable for such a position on account of the advantages of his professional education.

That provision be made by the Legislature for the establishment of an epidemic fund, to be used under the direction of the Governor, whenever, in his judgment, the State is threatened with an invasion of any pestilential disease.

Also, to amend the law so as to require a burial permit in all cases of death, the same to be issued upon a physician's certificate of death, in the same manner as is at present adopted by city ordinance in Indianapolis and other cities of the State.

Dr. Hibberd said he had given the question of amendments to the health law some attention, and saw the necessity of several changes in order to make the law efficient in carrying out the purposes for which it had been passed. The statute should, he thought, be amended so as to require returns of births, deaths, etc., to be made at once, instead of in fifteen days, and it should forbid burials without a permit from some local authority. For neglect of physicians to make returns as prescribed, the punishment should be simple, direct and cumulative for repeated neglects. The law should also be amended in the matter of the collection of vital statistics. As it stands, the State Board of Health has supervision of the collection, and the Secretary of the Board is made Superintendent of the same, but the safe keeping and clerical duties of the Bureau of Vital Statistics are placed under the control of the Secretary of State. This makes a divided service that can not fail sooner or later to militate against its highest usefulness. Everything that pertains to vital statistics should be under the exclusive control of the State Board of Health.

Perhaps it would not be necessary to amend the law to secure it, but the regulations for sanitary service should discriminate between the municipalities and the rural districts. It must be obvious to all that some sanitary rules and regulations demanded by a city or a town, and entirely practicable when the tendency is small and the population dense, are uncalled for in the country, and totally impracticable where the territory is large and the population sparse.

The collection of vital statistics is comparatively easy in towns and cities, and even at present are so much more nearly correct than those from the country, that they would be valu-

able, or could be made so if kept distinct by themselves, while the rural districts in their statistics are so very far from complete, and under present regulations can not be made reliable, so that while associated and tabulated with those from municipalities contaminate the whole and render them worthless. It is not a provision of law that the State Board of Health shall be composed of physicians, but it has been the practice to appoint all five of the members from active medical men. While it is important that the Secretary of the Board shall be a physician, as the law requires, there is substantial grounds for the belief that at least two of the other members should not be medical practitioners, but selected from engineers, builders, lawyers, or other industries, as men with suitable qualifications could be found. He thought the most practicable and convenient plan of carrying out the proposed law requiring a certificate and burial permit prior to burial would be to place the issuing of burial permits in the hands of the township trustees, as it would never do to require that people should travel outside of their own township to get a burial permit.

Secretary Metcalf said that New Hampshire had recently passed a law requiring the town clerks, who in that State were very similar to our Township Trustees, to issue burial permits, and the town clerk was authorized to appoint a deputy, or more than one where the district was large. He saw no reason why this duty should not be given to the Township Trustee, but hoped that there would be a free discussion of this and other points.

Dr. A. A. Hamilton, of Marion, said he thought there should be some provision of law for the erection of pest-houses when such places became necessary. He was now serving his third term as county health officer, and had realized, as doubtless others had also, the difficulty of making any such provision when the emergency arose. During his first year of office they were confronted with the necessity for a pest-house by an entirely unexpected case of small-pox in the county jail. They had no means at hand for isolating the case, and of course there was at once great excitement. At last through the help of a liberal-minded citizen they got possession of a house, and the family was removed at the expense of the county, but everybody had become so much alarmed that it was with the utmost difficulty that he could get the patient removed. Every

drayman had something else to do, and it was some time before he could secure either a vehicle or a horse to draw it.

He did not think the law was sufficiently clear as to what health officers could do in such an emergency.

Dr. Burket was of the impression that this was a local matter, which could best be dealt with and controlled by each county as it thought best. His experience had been that there was great objection to the location of a pest-house in any locality, and after they had been ordered to vacate one building which had been appropriated to such a purpose they had finally moved their pest to the cemetery. They thought that was perhaps the best place after all, as nobody could object to it there, and if the patient died it was ready for burial.

Dr. Smith, of Rushville, indorsed the suggestion as to requiring burial permits, and said there could be no question that the public interests would be greatly forwarded by more strict attention to the inspection of animals slaughtered for the market, and also by the regulation of slaughter-houses. It was the poorer classes who suffered most from the sale of diseased meat, and therefore he was the more anxious that the proposed amendment to the law should be passed.

At this point of the discussion the convention took a recess from noon until 1:30 P. M.

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#### AFTERNOON SESSION.

Upon the reassembling of the Convention at 1:45 P. M., the consideration of the regular programme was continued from the point reached at the hour of the noon adjournment. The first topic was

#### THE PROMOTION OF SANITARY WORK BY THE COÖPERATION OF SANITARY OFFICERS.

Dr. Hibberd said that his answer to the question, "How can sanitary work be promoted and the spread of disease be prevented by the coöperation of health officers?" was that their work should be practical and uniform, and in such close conformity with public sentiment that it will have popular support,

and then, further, that all officers should be required to live up to the regulations. Where regulations are impracticable, and on that account are left without attention, it begets negligence of and inattention to other regulations that are practicable, and would be made serviceable but for the bad habits that bad laws create and foster. It was important that the instructions to county health officers should make a distinction between their duties and those of the local health officers; and he suggested to the present excellent State Board that they should give their attention to the very broad distinction between the duties of the health officers of cities and those who had charge of large but sparsely populated counties.

Secretary Metcalf said the State Board in its instructions to health officers did not mean that all of the work required should be done by the county health officers. A good deal of it belonged to city and town officers, but with these the State Board had no direct communication. The State Board issued its instructions to the county health officers with a view to uniformity, and it was from them that the health officers of cities and towns were expected to learn the nature of their duties. That Rule 19 made the matter very plain, so that there need be no misunderstanding. It is as follows:

Rule 19: "City and town health officers shall record all returns of births, deaths and contagious diseases, and they shall monthly turn over to the county health officer the original birth, death and contagious disease returns. The county health officer, after recording these original returns, shall return them to the city or town health officer whence they were received, who will preserve them for future reference."

It is expected that the city and town officers should get their directions from the county health officer, just as the latter gets his instructions from the State Board. If he was to attempt to write directly to every local health officer in the State, his correspondence would fill volumes, and would be more than it would be possible to attend to.

Replying to Dr. Hibberd, he said he failed to recognize any difficulty in making a proper distinction between the duties of county and local health officers, in carrying out rule 17 relating to the placing of flags on houses where cases of infectious disease existed. It was not expected that the county health officer

would go to every part of the county to see whether local health officers were doing their duty, but they might keep a general oversight and be pretty well posted as to whether the regulations were being observed.

Dr. S. S. Boots, of Hancock County, thought the law was perfectly plain, and the rules easily understood. The county officer, so far as he understood, had nothing directly to do with the sanitary affairs of the cities that were within his jurisdiction, except to urge upon the city health officers the carrying out of their instructions; but it often happened that the county and city officers could act together with great advantage, as for instance in remedying a nuisance from slaughter houses, which affected the health of a city, although they might be situated outside of the limits, and, therefore, beyond the jurisdiction of the city health office. One great difficulty often arose from physicians not fully understanding the rules. For instance, in regard to the posting of contagious disease flags, many physicians did not understand that when they were called in such a case it was their business to post a flag; they thought that the health officer had to do it.

Dr. A. B. Bradbury, of Muncie, said that they had in their county eight towns which were not incorporated and had no health officers, and the salary of the county health officer was not sufficient to allow of their making surveys of these towns in person. The best thing he could do was to have as thorough a survey as possible made through one of the physicians living in each town, which he deputized as a volunteer health officer. Then, if any advice was required, of course he would have to go there in person, make another survey, acquaint himself with the facts, and do whatever was necessary, as the volunteer deputy could have no authority to act. His feeling was that there should be a local health officer for every township in the State, and he confessed to being hopeless of success under the present arrangement.

#### COMPULSORY VACCINATION.

The next subject on the program being, "Is Compulsory Vaccination of School Children Advisable, and Should Humanized Virus be Used?"

Dr. Hibberd remarked that, as an abstract proposition, com-

pulsory vaccination is advisable, but as it is impossible to enforce compulsory vaccination under ordinary circumstances, it should not be attempted. In the presence of an outbreak of small-pox it is generally easy to get all children vaccinated, and such a condition should be utilized whenever it may occur. Humanized virus should be used only in an emergency—when animal virus can not be obtained, and his experience had been that any attempt to enforce compulsory vaccination in the absence of an epidemic would be a total failure, for in his own city (Richmond) it had resulted in an open rebellion, and the school teachers who endeavored to carry out the health officers' instructions were discharged.

Dr. J. S. Arwine, of Columbus, said he was a believer in compulsory vaccination, and also in the ability to thoroughly disinfect buildings in which there had been cases of small-pox. He offered the following resolution as an expression of the sense of the convention:

*“Resolved, That a house in which a person has been sick with small-pox can be so thoroughly disinfected that it can be immediately occupied without danger to those who have never had the disease.”*

The reading of this resolution elicited a criticism from several gentlemen that its wording was objectionable, and one of them said that to adopt such a declaration would be about like their saying:

*“Resolved, That small-pox is unconstitutional.”*

Dr. Booth, of Hamilton County, said that his experience had been that in certain cases, as for instance, with very old houses which were full of cracks and crevices, it was better to burn them than to attempt to disinfect. In fact, he was disposed to think that disinfection under such circumstances was next to impossible.

Dr. Hibberd said the question was whether scientific investigations had furnished them with the requisite knowledge to enable them to thoroughly disinfect a house in which there had been a case of small-pox; whether it was advisable to go to the expense of disinfecting or better to burn up the premises, was another question altogether, which did not enter into the present discussion.

Dr. Burket said he believed the gentleman from Hamilton County was right in saying that a building might be so old

and dilapidated that it could not be disinfected, and that, therefore, it would not be proper to advise or commend the use of disinfectants as an absolute preventive of risk in all cases.

Dr. Arwine said that it did not seem a very difficult matter to disinfect a house from small-pox. His experience covered about nineteen cases, which occurred in five houses, and they had all been rendered fit for occupation in less than a month. There had been no spread of the disease, and therefore he thought it was demonstrated that they could prevent any risk of contagion; it was proper that the public should be so informed.

Dr. Metcalf said that the house referred to by Dr. Booth might properly have been condemned as a nuisance, and not on the ground that it could not be disinfected.

Dr. Smith, of Rushville, gave his experience of a case of varioloid which was successfully treated, and contagion averted, although a family lived in a room immediately adjoining that which the patient occupied. Under the direction of the City Health officer every orifice was stopped, and the case perfectly isolated. There was no spread of the disease while on the other hand he had known as many as thirty-four cases of small-pox to arise from the exposure of one case of varioloid, that of a soldier who returned home in 1865, and was visited by a number of the neighbors before it was known that he had the disease. Yet in this instance the disease did not go through scarcely a single family, although all of the houses were occupied right along. He was a great friend of the plan of disinfecting the houses where there had been small-pox, but still he did not believe it was proper to pass such a resolution as the one proposed. He doubted whether it would amount to anything if it were adopted. For his part he was more concerned about scarlet fever than he was about small-pox. He had never found any difficulty in isolating small-pox cases, as the public were quick to recognize the danger. But that was not the case to as large an extent as that other dreadful malady which devastated families of their little ones. And which was more difficult to control than small-pox. He was satisfied, however, that the public, when the danger was apparent, were ready to do almost anything that the health officers required of them; and that would be the case to a much larger extent at all times if the physicians themselves were not so ignorant of the law. Physicians

must learn that however mild a case of scarlatina or varioloid their patient might have, it was just as necessary to put out a flag, and when physicians did their duty in these respects, they would not only be educating the public at a time when they were particularly receptive, but they would find the people holding up their hands in all efforts to protect their little ones from the danger of contagion. If physicians would study as he had done for years, the health rules laid down by the authorities of New York, they would find that it was quite possible to stay the progress and prevent the spreading of scarlatina by prompt measures when the first cases appeared.

Dr. S. R. Seawright said that there was no prejudice against vaccination in his county (Tippecanoe), and he could not see why any community should be opposed to it. He had never, in all of his experience, known any serious results from vaccination, and yet in some communities there did seem to be a deep-seated prejudice against it.

Dr. Hibberd—Yes, it brought about a great riot in Montreal not long since.

Dr. Seawright said that if he had any doubt as to the efficiency of vaccination or preventing the spread of small-pox it would have been removed by an instance which had occurred in his county. A tramp who came along was given a job of cutting wood at a house within about one hundred and twenty yards of one of their school houses. It turned out that he had small-pox, and the two children of the family who lived in the house took the disease. Their doctor at first pronounced it chicken-pox, but it proved to be confluent small-pox. They mixed with the other children at the school for several days, but none of them took it, and subsequent inquiry developed the fact that theirs was the only family in the neighborhood that had not been vaccinated. The mother and an infant died of the disease. In Tippecanoe County the Superintendent of the public schools requires, as a condition of children attending school, a certificate that they had been thoroughly vaccinated, and he was convinced that if this could be done more generally beneficial results would follow. There was not the slightest opposition to it in the city of Lafayette.

Dr. E. A. Rogers, of Laporte, wished to give his experience in disinfecting premises after small-pox. Several years ago there were four cases of small-pox in one family. All of them



recovered and the house was, as he believed, thoroughly disinfected. Two years afterward a servant girl, while engaged in house cleaning, took the disease, undoubtedly from some germs of the disease which remained in the building. Now the question with him was, how could they tell when a house was thoroughly disinfected?

Upon a *viva voce* vote the Chair declared the resolution of Dr. Arwine to be lost, and a division, which was demanded, resulted in a like manner.

#### ASIATIC CHOLERA.

Dr. Hibberd, in opening a discussion of the next topic on the program, that of "Asiatic Cholera," gave it as his opinion that probably neither the introduction nor the spread of cholera can be prevented, but its introduction can be retarded, and its spread materially limited by the application of established rules of cleanliness and disinfection. The extent and fatality of cholera is very largely dependent on the depressing agency of fear, the filthy surroundings, and the failure to promptly disinfect all discharges from those affected. That he had expressed his views as he had jotted them down before coming to this Convention, and he still entertained the same opinions, but after the vote which had just been taken he supposed it was useless for him to expect much sympathy with his ideas from the present gathering. He did not believe any man who had read the latest rules for disinfecting could vote, as they had done, that a building could not be rendered fit for habitation by disinfection. It was a question, in his mind, whether any of them had given much attention to this subject; certainly they had not kept themselves posted as to the latest discoveries in regard to disinfection. Did they know the new facts that had been demonstrated within the last few years? It was now as certain as fate that if the rules for disinfecting were observed, a building could be thoroughly purified from all germs of contagion. It was not a question of deodorizing, of removing bad smells; that was a very different thing from disinfecting, and the rules for the latter were so plain that they could not be misunderstood. He confessed that they ought to be ashamed of themselves, that in this year 1886 they should say, as a convention of health officers, that a house can not be disinfected of small-pox.

Now as to the prevalence of the spread of cholera and other diseases of the bowels :

It had been demonstrated that it was possible to kill the germs of the disease after they had been ejected from the bowels of one person into the bowels of another person. It was not until some time after the discharge had left the bowels of one person that the germs of the disease were in active operation, and it was possible to kill them before they reached the stage at which the disease could be imparted to others. It was between those two stages, when they leave one person and enter another, that the work had to be done. There is a way of getting at this result, and if we can bring everybody to the use of the proper means, cholera can be checked just as surely as you can stop the flow of water by damming it up. What we have to do is to destroy the living germs before they pass from one person to another, and it can be done.

Dr. Booth said that he differed with the gentleman, and doubted the propriety of health officers professing their ability to do much in the way of disinfecting. If they promised so much, and their plans do not succeed in every case people would lose faith in the health officers. He, personally, believed in the power to disinfect, but he was not willing that this Convention should be too sweeping in its declarations. If they could not get at a germ, they could not kill it, and he was not sure that in every instance that could be accomplished.

Dr. Smith, of Rushville, thought that Dr. Hibberd's remarks were too sweeping. It was better to be on the safe side, because if they promised that in every case that a house could be disinfected, and it was found that after disinfectants had been used that some germs of the disease remained, the public would lose confidence in them.

A question of order being raised, the President ruled that the discussion was irrelevant to the topic now under consideration, and after some remarks by Secretary Metcalf, urging health officers to be prepared as far as possible for cholera in the event of an outbreak in the summer of 1886, the next topic on the programme was called up, which was—

## TYPHOID FEVER AND ITS SANITARY CARE.

Dr. Smith, of Rushville, said that he presumed that there was not a regular physician present who is not aware that as our State and the country generally gets older, typhoid fever becomes more and more prevalent. The settlements from the surface drainage render the wells impure in almost all of the towns and villages throughout the country, and in many respects the larger towns and cities are not very much better situated. A very large proportion of the wells are so surrounded with impurities that the water from them is not fit for drinking purposes, and families using it are inevitably exposed to risk of typhoid fever. When such cases arise, it is the business of physicians and officers of the Board of Health to educate the people as to the necessity and advantages of good drainage and pure water. As one of the speakers had said "that it was well to take advantage of a scare, if the people can not be educated as to their duty at any other time." They must be taught the necessity of clearing away the filth, and of digging their wells down deep enough. When people give up drinking the surface water they will have better health.

Dr. Buckingham said he believed the town of Brookville was considered by many as one of the healthiest towns in the State. The reason probably was that there were but two wells in all the town, the people getting their drinking water almost entirely from cisterns, and most of them using filters.

Dr. Hibberd said that it was his distinct understanding that both cholera and typhoid fever came from specific germs, and that while filth as an aggravating circumstance never breeds the disease, it was his belief that typhoid fever could only come from the typhoid germ, and it was when this germ finds its way into the human body that it takes the life, and the human being dies. The problem they had to solve, therefore, was how to destroy these germs; and he believed that they could do it before they had time to develop. To do this the discharges must be disinfected so soon as they were evacuated. It is an established fact that the cause of typhoid fever is a microbe, living upon and destroying certain tissues of the small intestines, and the disease is spread by this microbe being conveyed from the intestines of the ill to the intestines of the susceptible well. As this microbe is not mature when first discharged

from the bowels of the ailing, and must have time and opportunity to develop in order to become the generator of a new attack, all that is necessary to prevent the propagation of typhoid fever is to disinfect by established methods the discharges of typhoid victims as soon as they are evacuated. So true is this that the continued existence of typhoid fever is a humiliating testimony of popular ignorance and professional carelessness.

Dr. Huston, of Pendleton, said that his experience in typhoid fever had taught him that there was not so much danger of its propagation from one patient to another as many believed. In his locality the cases had been about one to a family, and several of them fatal, but it had not spread from one patient to another. There must, therefore, be some other cause, and he had found that in most instances where people had been attacked with typhoid fever that their surroundings were filthy. One house was situated below the level of a row of stables, and the surface drainage had been towards the well. The people in his town had, however, profited by the lessons learned at that time, and during the last three years there had been a thorough change in the sanitary arrangements of the privies and wells, with the most beneficial results.

The great thing they had to do, he thought, was to educate the people to abate nuisances and to insist on cleanliness if they would save them from typhoid fever.

The discussion of the next topic, viz.:

#### UNIFORMITY OF QUARTERLY REPORTS.

The subject was opened with some remarks by Mr. David N. Berg, chief clerk in the office of the Secretary of the State Board of Health, who spoke as follows:

“The value of the quarterly reports was seriously impaired by errors which could easily be rectified, and if he could succeed in getting those present to clearly understand what was required of them the result would be of public benefit. In the death reports, for instance, there were five items to be considered. The number of males and females should, of course, be the same in each item, but he often found quite a difference between the number given under the respective columns for

color, ages and social condition. The totals of every column should correspond with those of the first, and would do so if the returns were made correctly.

Take the marriage report, which is even more simple than the death returns. The first item gives the number married. Ordinarily it takes two people to make a marriage that counts for anything, and there should, therefore, be the same number of brides as grooms. When there appears in some of the columns more grooms than brides it became evident that there was some mistake, and yet that very often occurred.

A little care in making the returns would prevent such errors, which, as they could see, rendered the returns of no value unless corrected. The birth reports had eight columns to be filled. If there were no plurality births the number of children born should be just the same as the number of mothers, and if there were twins or triplets the children should, of course, exceed the number of mothers to that extent. Yet he often found reports in which noted as many as three cases of plurality of births, but there were just as many fathers and mothers as there were children, which they could all see was not correct. It had been attempted on pages five and six of the rules and regulations of the Board to explain fully what was required in the returns for vital statistics, but it was often quite difficult to put the matter as plainly in print as in a personal explanation.

He, therefore, hoped that whenever they had an opportunity they would endeavor to straighten these matters out, so that hereafter there might be less mistakes of this character in the returns.

Dr. Booth said that the error in the case of plural births arose from the fact that the returns as to the children took two lines, and was given as to each child separately, while the parents name should only appear once.

Dr. Bradbury thought that the State Board should send to each county health officer a trial sheet, as well as the blank upon which he was to make his returns, and if that was done many mistakes might be avoided, and the work of the health officer greatly simplified.

## SANITARY OVERSIGHT OF SCHOOL PROPERTY.

Secretary Metcalf said that the subject of the sanitary oversight of school property had been dealt with quite exhaustively in an article from the pen of Dr. Hibberd, which would appear in the forthcoming report of the State Board of Health. He desired to call the attention of health officers to this article, because he was sure they would find it worthy of the most careful perusal.

Dr. Hibberd said that "he only desired to say at the present time on this subject that public school-houses are a class of public institutions or buildings that are by law placed under the supervision of the State Board of Health, and all its auxiliary organizations for sanitary care. All health officers should accordingly feel it their duty, within his own jurisdiction, to have an observing eye over both the construction of new school-houses and annexes, and the maintenance of old and new according to the regulations of the State Board of Health. In this connection there is need of a sound discretion to order only what is necessary and not insist on anything being unsanitary unless it be so unquestionably." In his own effort to promote good sanitary measures in the public schools, he had found it a great advantage to take into partnership with him the County School Superintendent, and as a result of their united efforts, he believed that the schools of Wayne County were in a very fair sanitary condition.

Hon. John W. Holcombe, State Superintendent of Public Instruction, who had been present throughout the afternoon session, was invited to participate in the discussion of the question. He said that he had been attracted to this convention by his interest in sanitary work, and by his desire to hear what the gentlemen present had to say upon it. It had been a pleasure to him since he had been in office to further in every way that he could the efforts of the State Board of Health. When the former Secretary of the State Board had prepared an elaborate series of reports, giving valuable information concerning the sanitary condition of the public schools in various parts of the State, he had done his best to bring the facts thus collated under the notice of the educators of the State by the publication of a summary of this article in the next report of

the Superintendent of Public Instruction, and he believed that good results had followed. He entirely agreed with the suggestion of Dr. Hibberd that the County Superintendent was the proper person in each county to co-operate with the health authorities. The County Superintendent is required by law to visit every school at least twice in the year, during the school session, and his first visit is made very early in the session. He has therefore excellent opportunities for ascertaining what is needed to be done, and it was his duty to urge the school authorities to co-operate with the health officers. He knew that all of the gentlemen present were as much impressed with the importance of this matter as he was, and that they understood their duties much better than he could instruct them. He would therefore excuse himself from making any further remarks, and content himself with listening to what suggestions might be offered on the subject.

Dr. Booth said that an important matter connected with school houses was often overlooked, and that was the condition of the floors. When there were great cracks in the floors, and a constant draft, it could not but result in great injury to the female scholars, especially those who were just at the most critical period in a girl's life. He had known many instances in which a girl's health had been ruined for life in consequence of having to sit in a school room for hours with the wind flaring up her clothes. He hoped that County Superintendents would not fail to draw attention to such defective floors where they found them to exist.

Secretary Metcalf said that the Board of Health expected soon to issue a circular of suggestions to school officers, and a sufficient number would be printed to send one to every township trustee, and the officers of all the incorporated towns and cities.

It was also the intention to make another sanitary survey of the schools of the State during the coming year, in which they hoped to have the cordial assistance of school teachers and officers. He believed that that survey would show a very marked improvement in the sanitary condition of the schools of Indiana.

## COMPENSATION OF HEALTH OFFICERS.

Secretary Metcalf, in calling up for discussion the subject of "Compensation of Health Officers," said his belief was that the physicians themselves were largely to blame for the poor salaries they received as health officers. He believed this to be the case in a county which was one of the largest in population and probably the largest in area. The physicians got to wrangling among themselves, bidding against each other as to who should take the position at the smallest salary, and the man who took it resigned after holding the position only six months, being careful, however, to draw his pay for the whole term before he resigned. If physicians would persist in bidding for these offices in this way they had no one to blame but themselves, but he contended that when they took the position for the small salary they should perform all the duties pertaining to it for their entire term. In some counties it was true that the Commissioners were parsimonious. They professed to think that sanitation was all a humbug, but in many cases he believed that the people were better educated than the physicians on the subject, and too frequently the opposition came from men who should give sanitary measures their strongest support.

Dr. Hibberd was also of the belief that it rested very much with the physicians whether they got compensation enough for the performance of their duties as health officers. Certainly they should not slight the duties after they had accepted the office. If the pay was not enough all they had to do was to step down and out and let some other man try his hand at it. In his own case he had been obliged to submit to a reduction of salary of twenty-five per cent. on his first allowance, and he had never been paid anything like what he believed his services as a professional man entitled him to. But he felt that he was not in the work for the money that was in it, but was interested in the success of sanitary efforts, and was willing to do his part toward proving their efficiency. It had long ago been declared by a competent observer that in this country the chief source of failure to secure the best results in sanitary work was because the compensation was not large enough to hold the most successful workers in the field. This hindrance still



exists, but it is not easy to show how it is to be obviated until the fruits of such labor shall be of such recognized value that the people will insist upon the best service, and be willing to pay whatever may be necessary to obtain it.

He was convinced that if they once got this law into successful and general operation the people would recognize it as a good thing and be willing to pay liberally for the labor performed by the health officers. His present salary, he added, in reply to a question, was three hundred dollars a year, and he paid twenty per cent. of that out for clerical assistance.

Dr. Rogers, of Laporte, said his compensation was two hundred and eighty dollars a year, and his duties included attending the poor at the county asylum.

Dr. Bradbury thought the pay of health officers should be graded according to the population of a county.

Dr. Hibberd—And the amount of dirt there.

Dr. Bradbury—In many of the small counties the work was not so great, and the same was the case in counties where all of the towns had health officers. In his county (Delaware), as he had already said, there were eight towns which had no local health officers, and that added greatly to the work of the county health officer. His compensation was two hundred and forty dollars a year, and an allowance for expenses in the case of any special trip to distant parts of the county. He did not care to complain of the Commissioners of his county, as they believed they treated him very fairly, but still he did not regard the compensation as at all commensurate with the value of the work performed. He should continue, however, to do the work, as he regarded it in the light of a charitable service to assist in popularizing such an important measure.

#### HOW TO EDUCATE THE PEOPLE IN SANITARY MATTERS.

The regular program having been exhausted, Dr. Hibberd offered some remarks in reply to the question, "How shall the people be educated in sanitary matters?" The best possible teacher in sanitation for the populace would be for professed sanitarians to do such perfect work in their premises and of such public utility that even the careless should see its benefits and become active disciples of the cause.

Sanitary science is in its infancy, but in a rapid state of evolution, and all of its devotees should be careful not to create stumbling for the people by claiming as established facts in preventive medicine matters of prime importance, if true, that are under investigation and trial, and may to-morrow turn to be only delusive theories. There has been very rapid advancement in preventive medicine in recent years; and at no time more than in the period since the Indiana State Board of Health had been organized. But all they could say when asked for their advice upon many subjects was, "This is the best prevention we know of to-day; next month some better method may be found, but for the present this is the best thing we know of." He urged that health officers should always be ready to give information and suggestions, without, however, being too authoritative in their statements.

Secretary Metcalf said that health officers could do very much in the way of educating the people about sanitation, especially during the prevalence of epidemics, by sending to the State Board for their circulars on preventable diseases. People will read such a circular when they are alarmed, even although they would pay no attention to it at any other time. He believed, also, that the public press was to a very large extent in sympathy with sanitary measures, and health officers should not fail to make use of the newspapers in their districts.

Dr. Smith, of Rushville, bore testimony to the good results from circulating the State Board's preventable-disease circulars during the prevalence of an epidemic in his vicinity.

Dr. Bradbury said that he wanted to say something upon this subject of education. It was, as they all knew, a very difficult thing to teach old dogs new tricks, and old people were slow to recognize the importance of sanitation. Their best work could be done in the public schools. That would be beginning the work properly. Teachers in the schools should be required to pass examination on the principles of sanitary science, as a condition of receiving their license, and that it should be a branch of study in the schools. By addresses at the meetings of county agricultural societies and other organizations of a similar character an efficient health officer could do a good deal toward the education of the various classes of the community as to their interests in this matter. But the prime work, he thought, was in the schools.

Dr. Smith, of Rushville, expressed his belief that the best educational work could be done by the dissemination of information at the time when people felt that the lives of their little ones and their friends were in danger. You might read volumes on sanitation in the family of the farmer, the mechanic, or the lawyer, at ordinary times, and they would pay no attention, but when the lives of their families are in jeopardy, they will take the counsel of the physician or the health officer, and will put it in practice.

They will be glad then to get all of the information that they can as to the best means of preventing diseases and protecting their little ones. They will read every word of the health circulars that you send them, and will understand what it is that is required of them. On the other hand, he doubted very much if the children in the schools would pay a great amount of attention to the kind of teaching proposed by Dr. Bradbury.

Dr. Hibberd offered as a suggestion that health officers should, when practical, take charge of a column in one of the local newspapers, to bring sanitary matters under the notice of the public through that channel, only he was afraid that sometimes it might lead to quarrels between rival newspapers and rival physicians that would end in more mischief than good.

Secretary Metcalf, at the suggestion of Dr. Burke, the President of the Convention, offered the following resolution:

*Resolved*, That it is the judgment of this Convention that health primers should be introduced into the public schools of our State, for the purpose of educating the youth in the principles of hygiene and sanitation.

State Superintendent Holcombe, in reply to a question, said that he thought that the adoption of such a resolution would be entirely proper as expressing the sentiments of the Convention.

The laws relating to text books, as they were aware, were passed by the Legislature, but he believed that the object sought to be attained might be reached in the teaching of physiology, as most standard works on that branch of study devoted a good deal of attention to the subject of hygiene, and a considerable amount of information on sanitary matters could thus be brought in. At the same time he believed that such primers as were suggested in the resolution could be used with advantage.

After some further remarks from Dr. Bradbury the resolution was adopted.

#### A FATAL CASE OF GLANDERS.

The Convention then listened to the reading of the report of a case of glanders which terminated fatally in Parke County. [The paper, which had been prepared and was read by Charles C. Morris, M. D., health officer of Parke County, appears in full in the annual report for 1885 of the State Board of Health.]

After the Committee on Resolutions had been discharged, no business having been referred to it for consideration, the Convention, at 3:45 P. M., adjourned, *sine die*.

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#### SCHOOLS AND SCHOOL HOUSES.

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We are justly proud of our schools and school houses. There is no tax that our citizens pay more cheerfully than that which is expended for the education of the children of our State; and while it may be truthfully said that there are some individuals who are inclined to overload the school system, yet the conservative element is applying the brakes, and we confidently expect that a healthy condition of things will be the outcome.

Substantially the same order was issued this year to school authorities as has been the custom of this Board for several previous years. The result has been an awakening as to the conditions necessary to bring about the best results as to sanitary arrangements in the maintenance and construction of school houses.

The Board, in the past year, has somewhat revised the rules in regard to the prevention and spread of contagious and infectious diseases among school children, and we deem them of sufficient importance to insert them here.

As a rule this is not done, however, until much valuable time has been wasted by the teacher's ineffectual attempt to do more work than he can possibly do. Relief may be given by opening another ungraded school, but common sense dictates the policy of division of labor, of giving to one teacher the older and more advanced pupils, and to the other those of more tender years and less advancement. A graded school, imperfect, it is true, but still a graded school, is the result. A further increase of population and of pupils dictates another teacher. Good sense dictates a still closer division of labor, and the school becomes more closely graded. As the village grows into the town, increases in size and importance, teacher after teacher is added, and the school is more and more closely graded, until the ordinary system of graded schools is reached. This in Indiana towns means four years of primary instruction — four years of intermediate or grammar-school work, and three or four years of high-school work, as the crowning feature of the system. In the primary and intermediate schools a teacher is given to the pupils of each separate year or grade, while the pupils in the high school may have one or more teachers, according to the number in the school. The high school with but one teacher has much the same relation to the fully equipped high school of the larger towns and cities as the ungraded school has to the one well graded. The one teacher with ten or twelve recitations to hear each day, covering so wide a field, has certainly an unenviable position. When two or more teachers are employed the division is accomplished, not as in the primary and intermediate grades, by giving to each teacher the pupils of one year or grade, but by a division of the work into departments, as Mathematics, Language or Natural

**RULE 4.** The county, city and town health officers shall exercise especial hygienic supervision over the schools and school houses within their respective jurisdictions, and where hygienic faults are found, it shall be the duty of said officers to call, immediately, the attention of the school authorities thereto, and see that they have them removed.

Wherever these rules are rigidly enforced the danger of spreading the disease is very materially lessened, if not entirely averted. In several localities within the past year where some of these maladies, especially scarlet fever and diphtheria, have appeared we are confident that by the vigilance and prompt action of the health officers much suffering and loss of life were prevented.

In sections where these fatal diseases have made their appearance, and the people were so fortunate as to have efficient boards of health, their utility has been abundantly demonstrated, and these communities have shown their reliance upon the health authorities by their appeal to them for succor in their hour of need. It is a noteworthy fact that in such localities boards of health are most popular, and the public is ready to sustain them at a reasonable cost. While much improvement has been made in the sanitary conditions of school houses,

After some further remarks from Dr. Bradbury the resolution was adopted.

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#### ~~PHYSICIAN~~ AND SCHOOL HOUSES.

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BY JUSTIN N. STUDY, SUPT. PUBLIC SCHOOLS, RICHMOND, IND.

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The institutions of civilized life are the developments of the conceptions of a cruder age, or the outgrowths of the necessities of the times or conditions of society in which they have come into existence.

The free school system of our country is a necessary outgrowth of our form of government. We can not conceive of an enduring republic with an ignorant people. The fathers wisely provided for a system of free education whose powers of expansion have no limit save the abilities and desires of the people.

#### EVOLUTION OF THE GRADED SCHOOL.

As the public school system is a natural and necessary outgrowth of our form of government, so is the graded school a natural development of the ungraded village school of former days.

The village school at first has but a single teacher, and comprises all sizes, ages and conditions, from the tow-headed urchin of five or six years to the full-grown youth of twenty-one. All branches are taught, and all stages of advancement represented, from the beginner wrestling with the mysteries of c-a-t, h-a-t, r-a-t, or farther advanced struggling with the intricacies of NED, CAN YOU HOP? to the adventurous youth who has daringly invaded the realms of algebra or geometry. As the village increases in size, and pupils increase in number, it is at last found advisable to employ another teacher and open another school.

As a rule this is not done, however, until much valuable time has been wasted by the teacher's ineffectual attempt to do more work than he can possibly do. Relief may be given by opening another ungraded school, but common sense dictates the policy of division of labor, of giving to one teacher the older and more advanced pupils, and to the other those of more tender years and less advancement. A graded school, imperfect, it is true, but still a graded school, is the result. A further increase of population and of pupils dictates another teacher. Good sense dictates a still closer division of labor, and the school becomes more closely graded. As the village grows into the town, increases in size and importance, teacher after teacher is added, and the school is more and more closely graded, until the ordinary system of graded schools is reached. This in Indiana towns means four years of primary instruction — four years of intermediate or grammar-school work, and three or four years of high-school work, as the crowning feature of the system. In the primary and intermediate schools a teacher is given to the pupils of each separate year or grade, while the pupils in the high school may have one or more teachers, according to the number in the school. The high school with but one teacher has much the same relation to the fully equipped high school of the larger towns and cities as the ungraded school has to the one well graded. The one teacher with ten or twelve recitations to hear each day, covering so wide a field, has certainly an unenviable position. When two or more teachers are employed the division is accomplished, not as in the primary and intermediate grades, by giving to each teacher the pupils of one year or grade, but by a division of the work into departments, as Mathematics, Language, or Natural Science.

#### ADVANTAGES OF THE GRADED SCHOOL SYSTEM.

The advantages of the graded school are many, and though most of them are quite obvious, yet a few may be briefly mentioned here:

1. The teacher by being given a limited field is able to do more thorough work in that field. It is the relentless common sense of the factory applied to the school. The manufacturer requires one man to spend his life making a very small part of a shoe, because by such limitation of labor the labor becomes more profitable.

2. Pupils doing any specified year's work of the graded school will for the most part be of nearly the same age. Thus the discipline may be made suitable to the age of the child.

3. The course of study is adapted to the average boy or girl, and thus the majority of the school have the attention of the teacher, instead of his time being monopolized by a few who, by reason of superior mental endowments, are too often the recipients of the major part of the teacher's efforts in the ungraded school. This is frequently held up as a defect, and I have seen it gravely stated in the public prints, that the old-fashioned country schools did better work than modern schools, because of the possibilities for the wide-awake boy or girl to make a rapid advancement. The rapid advancement of the one or two prodigies of the district school was always at the expense of the great majority who must, per-force, content themselves with such scraps of the teacher's time as were not demanded by their more precocious companions. The truth is that the old-fashioned schools were, as a rule, not to be compared in efficiency with the district schools of the present day. Those who hold otherwise look back at the schools of a generation ago through the haze of years that casts a halo about what was not of special merit in itself. They see things much as do speakers at old-settlers' meetings, who dolefully compare the

present times with the pioneer days, forgetting that it is youth that makes all things bright, or as the husband, with broken-down digestion, who sighs for cooking such as mother's, ignoring the marvelous rapacity of the boyish appetite, and wonderful capacity of the boyish stomach.

Many other advantages might be named, such as the stimulus of promotions, the periodical change of teachers, whereby the pupil is brought into contact with new views of things, and avoids acquiring the mannerisms of any particular teacher. The advantages of the graded system are so many and so marked that the system must continue and be extended rather than otherwise.

#### CRITICISMS OF THE GRADED SCHOOL SYSTEM.

From time to time criticisms marked by a greater or less degree of keenness appear in newspapers. These criticisms are mainly directed to the pressure of the system. Physicians from time to time charge to the over-work of the public schools the various ills of child life.

Let us examine briefly the charges, and see whether or not the school system is justly criticised.

Ill health among pupils that can be justly charged to their school work and life must be from one or both of these causes:

1. Over-work.
2. Bad sanitary conditions.

Over-work may be from an attempt to take too many studies, or it may be from an attempt to do an unreasonable amount in a few studies. If either is required of the whole school or grade it is clearly the fault of the system. Bad effects may follow ill-directed work, but such work is not apt to be done when the pupil is in the hands of a skillful teacher. But there may be individual over-work which can not be justly charged to any system. The course of study should be arranged to meet the capabilities of the child of average strength of mind and body. If an individual pupil is below that average in mind or in body, he should not be compelled to attempt the entire work. He should not be allowed even to attempt it. But in case he attempt it and fail in health, it is not justice to hold the system accountable for lack of essential qualifications in the individual.

The course of study in the schools of the larger towns and cities is practically the same. Let us examine the course of study of the schools of Richmond as perhaps about a fair sample of the amount of work required in the city systems of Indiana schools. We find in the first two years of the course seven branches required—reading, spelling, writing, numbers, language, music, and drawing. The array appears much more formidable than it really is. An average child finds the work extremely pleasant, and does it easily. The sessions of school begin at 8:45 o'clock and close at 11:30 o'clock A. M., and begin at 1:30 o'clock and close at 3:30 o'clock P. M. The sessions are broken by frequent recesses. No outside study is required.

In the third year of school oral geography—local—is added, and the session is lengthened to the requirement that obtains in all the grades above the second. The schools open at 8:45 o'clock and close at 11:45 o'clock A. M., and begin at 1:30 o'clock and close at 3:45 o'clock P. M. for all whose attendance, deportment and lessons have been satisfactory. For others the session closes at 4:15 P. M. Thus the school day for the first two years of school is but five hours in length, including the recesses, which take up from forty to fifty minutes.



In the remaining years the school day for the majority is but five and one-half hours, including fifteen minutes' recess in the morning and the same in the afternoon—five hours in all. For those who remain longest it is but five hours, exclusive of recesses. In the fourth year written arithmetic is begun and a text-book in geography introduced. In the sixth year a book in language is taken up, the work having hitherto been given by the teacher from the blackboard. In the seventh and eighth years physiology and United States history are studied, but take the place of other subjects, and do not add to the number. In the upper grades no pupil is required to take more than three leading studies at a time. The additional work is so arranged as not to fairly count more than two studies in time, and not more than one in brain work.

In the majority of the schools—those of smaller cities and towns—music and drawing are not required branches, but in other respects the work is substantially as in the Richmond schools.

#### ARE TOO MANY STUDIES REQUIRED?

In manual labor we find that change of employment rests us when we tire.

The boy at the woodpile does not saw continuously, but alternates his sawing and his splitting. Experience has taught teachers that children can do a number of things in succession with pleasure and without weariness, providing that each exercise is continued but a short time, while long-continued attention to any one thing is very tiresome, and consequently profitless. Hence the skilled primary teacher passes from one subject to another before her pupils have become wearied. That this is the true method of primary work is evidenced by a look into any primary school-room under charge of a skillful teacher and under good sanitary conditions. The bright and happy faces, the eager recitation, the absorbing interest with which the pupils pursue all their work, make the sight to one who loves children most interesting. The majority of little folks go to their school-room with gladness and leave it with reluctance. The introduction of kindergarten methods and ideas into primary teaching, of late years, has done much to render the work delightful to children. As pupils grow older and are advanced in the schools, of course longer lessons are required, and longer attentiveness to one subject. The length of the recitation increases up to the high school, where it reaches its maximum of forty-five minutes to one hour. In the high school but four studies are required, and the course is so arranged that one of them each term is comparatively light.

In the upper grades, in the high schools and in college, experience has demonstrated the wisdom of carrying several subjects at a time rather than devoting all the time to a single subject. Some years ago an institution styling itself "The One Study University," began its career, presumably with a college charter. It may yet be in existence, but if so, its success has not been such as to attract the slightest attention in the educational world, or to cast a doubt upon the practical wisdom of the commonly accepted plan of a diversity of subjects. A piece of educational quackery, it has probably met its well-merited fate.

I think it safe to say that, for the average boy or girl, the schools do not require too many studies.

## IS TOO MUCH WORK REQUIRED?

Overwork is more likely to happen by ambitious teachers attempting to cover too much ground in a stated time than by the mere number of studies required. To satisfy myself as to this point, I caused an investigation to be made in the Richmond schools with regard to the number of hours of study in and out of school, hours of recitation, hours of sleep, number of studies, etc. Blanks were filled by the pupils themselves in the High School, and in the sixth, seventh and eighth grades of the district schools, while in the lower grades reports were made by the teachers alone. The results of the investigation are given below:

## HIGH SCHOOL.

In this school the whole enrollment is 122, but reports were received but from 106, the number present the day the blanks were distributed.

## SENIOR CLASS.

• Number reporting]. . . . .	11
Average age . . . . .	18 years.

## Number of studies:

- 1 with 6 studies.
- 8 with 5 studies.
- 2 with 4 studies.

It is proper to state in this connection that drawing is here counted as a full study, whereas, as it takes but one recitation per week, it is but one-fifth of a study, and that the pupil reporting six studies has an elective study. Thus the highest number is in reality five and one-fifth, and the lowest three and one-fifth.

## Number of hours of recitation:

- 1 recites 3 hours 45 minutes per day.
- 8 recite 3 hours — minutes per day.
- 2 recite 2 hours 15 minutes per day.

On drawing days 45 minutes must be added to the foregoing account.

## Number of hours of preparation in school per day:

- 1 reports 2 hours 15 minutes.
- 7 report 1 hour 30 minutes.
- 1 reports 1 hour 21 minutes.
- 1 reports 45 minutes.
- 1 reports 30 minutes.

## Number of hours of home work in preparation of lessons:

- 6 report 3 hours.
- 2 report 2 hours 30 minutes.
- 1 reports 2 hours.
- 1 reports 1 hour 30 minutes.
- 1 reports 1 hour.

Number of hours of sleep :

1 reports 10 hours.

4 report 9 hours.

6 report 8 hours.

JUNIOR CLASS.

Number reporting . . . . . 14

Average age . . . . . Nearly 18 years.

Number of studies :

8 report 5 studies.

6 report 4 studies.

In this class drawing takes the place of another recitation, so that the highest is really four and the lowest number three.

Number of hours of recitation :

8 recite 3 hours.

6 recite 2 hours 45 minutes.

Number of hours of preparation in school :

1 reports 2 hours 15 minutes.

2 report 2 hours.

7 report 1 hour 30 minutes.

1 reports 1 hour 20 minutes.

1 reports 1 hour 10 minutes.

1 reports 1 hour 7 minutes.

1 reports 45 minutes.

Number of hours of home work in preparing lessons :

7 report 3 hours.

2 report 2½ hours.

2 report 1½ hours.

2 report 1 hour.

1 reports 0 hours.

Number of hours of sleep :

7 report 8 hours.

2 report 7½ hours.

4 report 7 hours.

1 reports 6 hours.

SECOND YEAR CLASS.

Number reporting . . . . . 30

Average age . . . . . 16½ years.

Number of studies :

17 report 5 studies.

7 report 4 studies.

4 report 3 studies.

2 report 2 studies.

In this class drawing counts one-fifth of a study, so that the highest is really but four and one-fifth studies.

Number of hours of recitation :

- 17 recite 3 hours on 4 days;  $3\frac{3}{4}$  hours on 1 day.
- 3 recite 3 hours.
- 4 recite  $2\frac{1}{2}$  hours on 4 days; 3 hours on 1 day.
- 4 recite  $2\frac{1}{2}$  hours.
- 2 recite  $1\frac{1}{2}$  hours.

Number of hours of preparation in school :

- 1 reports 3 hours.
- 3 report between  $2\frac{1}{2}$  and 3 hours.
- 6 report between 2 and  $2\frac{1}{2}$  hours.
- 1 reports 1 hour 35 minutes.
- 6 report 1 hour 30 minutes.
- 12 report 1 hour 20 minutes.
- 1 reports no study.

Number of hours of home work in preparing lessons :

- 1 reports  $3\frac{1}{2}$  hours.
- 1 reports 3 hours.
- 2 report  $2\frac{1}{2}$  hours.
- 5 report 2 hours.
- 2 report  $1\frac{3}{4}$  hours.
- 7 report  $1\frac{1}{2}$  hours.
- 2 report  $1\frac{1}{4}$  hours.
- 10 report 1 hour or less.

Number of hours of sleep :

- 2 report 10 hours.
- 17 report 9 hours.
- 2 report  $8\frac{1}{2}$  hours.
- 9 report 8 hours.

#### FIRST YEAR CLASS.

Number reporting . . . . . 51  
Average age . . . . . Nearly 16 years

Number of studies :

- 2 report 6 studies.
- 40 report 5 studies.
- 6 report 4 studies.
- 1 reports 3 studies.
- 1 reports 2 studies.
- 1 reports 1 study.

In this class drawing does not add to the number of studies except in name, as it takes the place of another recitation on drawing days; therefore, from the highest numbers reported one should be subtracted.

Number of hours of recitation :

2 recite 3 hours 30 minutes.  
 44 recite 3 hours.  
 3 recite 2 hours 15 minutes.  
 1 recites 1 hour 30 minutes.  
 1 recites 45 minutes.

Number of hours of preparation in school :

1 reports 2 hours 15 minutes.  
 3 report 2 hours.  
 41 report 1 hour 30 minutes.  
 2 report 1 hour 20 minutes.  
 3 report 45 minutes.  
 1 reports none.

Number of hours of home work :

3 report 4 hours.  
 1 reports  $3\frac{1}{2}$  hours.  
 4 report 3 hours.  
 5 report  $2\frac{1}{2}$  hours.  
 11 report 2 hours.  
 6 report  $1\frac{1}{2}$  hours.  
 13 report 1 hour.  
 1 reports  $\frac{3}{4}$  hour.  
 5 report  $\frac{1}{2}$  hour.  
 2 report none.

Number of hours of sleep :

1 reports  $10\frac{1}{4}$  hours.  
 2 report 10 hours.  
 2 report  $9\frac{1}{2}$  hours.  
 24 report 9 hours.  
 1 reports  $8\frac{3}{4}$  hours.  
 1 reports  $8\frac{1}{2}$  hours.  
 14 report 8 hours.  
 2 report  $7\frac{1}{2}$  hours.  
 4 report 7 hours.

EIGHTH YEAR GRADES.

Number of schools. . . . .	2
Number of pupils reporting . . . . .	73
Average age . . . . .	15 years.
Number of branches. . . . .	8
Number of daily recitations . . . . .	7

Time spent per day in recitation :

26 report 3 hours.  
 54 report  $2\frac{3}{4}$  hours.

Time spent per day in school in preparing lessons :

26 report  $1\frac{1}{4}$  hours.  
 54 report  $1\frac{3}{4}$  hours.

## Time spent at home in preparing lessons :

1 reports 3 hours.  
 1 reports  $2\frac{3}{4}$  hours.  
 1 reports  $2\frac{1}{2}$  hours.  
 15 report 2 hours.  
 2 report  $1\frac{1}{2}$  hours.  
 10 report  $1\frac{1}{2}$  hours.  
 4 report  $1\frac{1}{4}$  hours.  
 18 report 1 hour.  
 11 report 45 minutes.  
 9 report 30 minutes.  
 1 reports 25 minutes.

## Number of hours of sleep :

1 reports  $10\frac{1}{2}$  hours.  
 6 report 10 hours.  
 3 report  $9\frac{1}{2}$  hours.  
 34 report 9 hours.  
 29 report 8 hours to 9 hours.  
 Average of grade, nearly 9 hours.

## SEVENTH YEAR GRADES.

Number of schools . . . . .	4
Number reporting . . . . .	117
Average age . . . . .	$14\frac{1}{2}$ years.

## Number of studies :

9 report 10 studies.  
 105 report 8 studies.  
 1 reports 6 studies.  
 2 report 5 studies.

It is proper to state that where 10 studies are reported it is from pupils in the German school, where German reading, writing and spelling alternate with English.

In this grade physiology takes the place of geography, the last term, in the purely English schools, while in the German schools the pupils are given the term to complete the same geography work, as the others have had. Outside of this, the work in English in the grade, and also in the lower grades, is very nearly equal in amount to the English work done in the schools where German is not taught. Although there is a rest perhaps in passing from one language to the other, yet it is fair to presume that the work is somewhat heavier where both languages are studied, still not so much heavier as would be indicated by the number of studies reported.

## Number of hours of recitation :

31 report 3 hours 15 minutes.  
 55 report 2 hours 40 minutes.  
 26 report 2 hours 30 minutes.  
 5 report less than 2 hours 30 minutes.

Number of hours in school of preparation :

31 report 1 hour 55 minutes.  
 26 report 1 hour 50 minutes.  
 45 report 1 hour 40 minutes.  
 13 report 1 hour 30 minutes.  
 2 report 1 hour.

Number of hours of home work in preparing lessons :

4 report 2 hours.  
 2 report 1 hour 30 minutes.  
 10 report 1 hour.  
 1 reports 50 minutes.  
 8 report 45 minutes.  
 42 report 30 minutes.  
 25 report less than 30 minutes.  
 25 report no home study.

Number of hours of sleep :

1 reports 12 hours.  
 2 report 11 hours.  
 1 reports 10½ hours.  
 27 report 10 hours.  
 53 report 9 hours to 10 hours.  
 29 report 8 hours to 9 hours.  
 4 report 7 hours to 8 hours.  
 Average of grade, 9 hours +.

SIXTH YEAR GRADE.

Number of schools . . . . .	5
Number reporting . . . . .	152
Average age . . . . .	13+.

Number of studies :

12 report 10.  
 1 reports 9.  
 139 report 8.

Here, as in the Seventh Grades, the number above 8 is reported from the German school.

Number of hours of recitation :

40 report 3 hours 25 minutes.  
 12 report 2 hours 50 minutes.  
 45 report 2 hours 45 minutes.  
 24 report 2 hours 35 minutes.  
 31 report 2 hours 15 minutes.

## Number of hours of preparation in school :

31 report 2 hours 45 minutes.  
 40 report 1 hour 55 minutes.  
 55 report 1 hour 50 minutes.  
 14 report 1 hour 40 minutes.  
 12 report 1 hour 30 minutes.

## Number of hours of home-work in preparation of lessons :

1 reports 2 hours 30 minutes.  
 13 report 1 hour.  
 8 report 45 minutes.  
 5 report 35 to 40 minutes.  
 33 report 30 minutes.  
 31 report less than 30 minutes.  
 61 report no study at home.

## Number of hours of sleep :

4 report 11 hours.  
 2 report 10½ hours.  
 30 report 10 hours.  
 8 report 9½ hours.  
 57 report 9 hours.  
 12 report 8½ hours.  
 25 report 8 hours.  
 14 report less than 8 hours.

In all these reports as to sleep it is probable that the time is underestimated rather than otherwise.

Below the Sixth Grade reports were taken from teachers only. The same reports were also taken from the teachers of the Sixth, Seventh and Eighth Grades, and are given also, as in some respects they are more accurate than the reports made by pupils.

## EIGHTH GRADE.

Number of schools . . . . .	2
Number of pupils . . . . .	80
Average age of pupils . . . . .	15 years.
Number of studies . . . . .	8
Number of recitations, daily . . . . .	7

## Time spent by each pupil in recitation, daily :

1 teacher reports 3 hours.  
 1 teacher reports 2 hours 45 minutes.

## Time spent by each pupil in school in preparation :

1 teacher reports 1 hour 15 minutes.  
 1 teacher reports 1 hour 45 minutes.

## Average time spent by pupils in home study of lessons :

1 teacher reports 1 hour 30 minutes.  
 1 teacher reports 30 to 45 minutes.



SEVENTH GRADE.

Number of schools . . . . . 4  
 Number of pupils . . . . . 126  
 Average age of pupils . . . . . 14 years.

Number of studies:

3 teachers report 8.  
 1 teacher (German) reports 10.

Number of recitations of each pupil:

3 teachers report 8.  
 1 teacher reports 7.

Time spent by each pupil in recitation:

2 teachers report 3 hours 25 minutes.  
 1 teacher reports 2 hours 45 minutes.  
 1 teacher reports 2 hours 40 minutes.

Time spent by each pupil in school in preparation:

2 teachers report 1 hour 55 minutes.  
 1 teacher reports 1 hour 35 minutes.  
 1 teacher reports 1 hour 30 minutes.

Home study:

2 teachers *require* no home study.  
 2 teachers *require* 30 minutes.

SIXTH GRADE.

Number of schools . . . . . 5  
 Number of pupils . . . . . 165  
 Average age of pupils . . . . . Nearly 13 years.

Number of studies:

4 teachers report 8  
 1 teacher (German) reports 10.

Number of daily recitations of each pupil:

3 teachers report 8.  
 2 teachers report 7.

Time spent by each pupil in recitation:

2 teachers report 2 hours 15 minutes.  
 1 teacher reports 3 hours 25 minutes.  
 1 teacher reports 1 hour 45 minutes.  
 1 teacher reports 2 hours 45 minutes.

Time spent in preparation:

1 teacher reports 2 hours 40 minutes.  
 1 teacher reports 1 hour 55 minutes.  
 2 teachers report 1 hour 50 minutes.  
 1 teacher reports 1 hour 30 minutes.

Home study:

1 teacher reports 40 minutes.  
 2 teachers report 30 minutes.  
 2 teachers report none.

## FIFTH GRADE.

Number of schools . . . . .	7
Number of pupils . . . . .	240
Average age . . . . .	12 years+.

## Number of studies :

- 6 teachers report 8.
- 1 teacher (German) reports 10.

## Number of recitations of each pupil daily :

- 3 teachers report 8.
- 3 teachers report 7.
- 1 teacher reports 9.

## Time spent by each pupil in recitation :

- 3 teachers report 2 hours 30 minutes.
- 1 teacher reports 2 hours 20 minutes.
- 2 teachers report 2 hours 15 minutes.
- 1 teacher reports 1 hour 35 minutes.

## Time spent in preparation in school :

- 1 teacher reports 2 hours 30 minutes.
- 2 teachers report 2 hours 15 minutes.
- 1 teacher reports 2 hours.
- 2 teachers report 1 hour 45 minutes.
- 1 teacher reports 1 hour 30 minutes.

## Home study :

- 1 teacher requires 20 minutes.
- 6 teachers require no home study.

## Number of hours of sleep of pupils :

- 5 teachers report average of 9 hours.
- 2 teachers report average of 8 hours.

## FOURTH GRADE.

Number of schools . . . . .	8
Number of pupils . . . . .	292
Average age of pupils . . . . .	11 years+.

## Number of studies :

- 7 teachers report 8.
- 1 teacher (German) reports 9.

## Time spent by each pupil in recitation :

- 1 teacher reports 3 hours 30 minutes.
- 1 teacher reports 3 hours.
- 1 teacher reports 2 hours 40 minutes.
- 2 teachers report 2 hours 20 minutes.
- 3 teachers report 2 hours 15 minutes.

Time spent in school in preparation of lessons :

- 1 teacher reports 2 hours 55 minutes.
- 1 teacher reports 2 hours 20 minutes.
- 2 teachers report 2 hours 15 minutes.
- 1 teacher reports 2 hours 10 minutes.
- 3 teachers report 2 hours and less.

Home study :

No home study required, except in special individual cases.

Number of hours of sleep of pupils :

All report from 9 to 10 hours.

THIRD GRADE.

Number schools in which is the grade . . . . .	10
Number of pupils . . . . .	326
Average age of pupils . . . . .	9½ years+.

Number of studies :

- 8 teachers report 8.
- 2 teachers (German) report 9 :

Number of recitations of each pupil daily :

- 2 teachers report 11.
- 4 teachers report 10.
- 3 teachers report 9.
- 1 teacher reports 8.

Time spent by each pupil in recitation :

- 2 teachers report 2 hours 45 minutes.
- 2 teachers report 2 hours 40 minutes.
- 2 teachers report 2 hours 30 minutes.
- 4 teachers report from 2 hours 10 minutes to 2 hours 25 minutes.

Time spent in school by each pupil in preparation :

- 1 teacher reports 2 hours 45 minutes.
- 1 teacher reports 2 hours 30 minutes.
- 1 teacher reports 2 hours 15 minutes.
- 2 teachers report 2 hours.
- 5 teachers report 1½ hours to 1¾ hours.

Time spent in home study :

- 1 teacher (German) reports 30 minutes.
- 9 teachers report no home study.

Average number of hours of sleep of pupils :

9¼ hours.

SECOND GRADE.

Number of schools in which the grade is found . . . . .	12
Number of pupils in grade . . . . .	356
Average age of pupils . . . . .	9 years+.

## Number of studies :

- 10 teachers report 7.
- 2 teachers report (German school) 8.

## Number of recitations daily of each pupil :

- 3 teachers report 10.
- 9 teachers report 9.

## Time spent by each pupil in recitation :

- 10 teachers report 2 hours to 2 hours 30 minutes.
- 2 teachers report 1 hour 45 minutes.

## Time spent in school in preparation :

- 5 teachers report 2 hours to 2 hours 15 minutes.
- 3 teachers report 1 hour 30 minutes to 1 hour 45 minutes.
- 4 teachers report 1 hour 10 minutes to 1 hour 25 minutes.

## Home study of lessons :

- 1 teacher reports 30 minutes.
- 11 teachers report none.

## Hours of sleep of pupils :

- All report 9 to 10 hours.

## FIRST GRADE.

Number of schools . . . . .	14
Number of pupils . . . . .	581
Average age . . . . .	Nearly 7 years.

## Number of studies :

- 12 teachers report 7.
- 2 teachers report 8.

## Number of recitations, daily, of each pupil :

- 2 teachers report 10.
- 4 teachers report 9.
- 4 teachers report 8.
- 2 teachers report 6.
- 2 teachers report 4.

## Time spent by each pupil in recitation :

- 1 teacher reports 2 hours and 50 minutes.
- 8 teachers report 2 hours to 2 hours and 25 minutes.
- 5 teachers report 1 hour and 10 minutes to 1 hour and 50 minutes.

## Time spent in preparation, in school :

- 5 teachers report 2 hours.
- 1 teacher reports 1 hour and 50 minutes.
- 3 teachers report 1 hour and 45 minutes.
- 1 teacher reports 1 hour and 35 minutes.
- 3 teachers report 1 hour and 15 minutes.
- 1 teacher reports 1 hour and 10 minutes.
- Home study—none at all.
- Sleep of pupils—10 hours +.

The following question was asked of all the teachers: "In your opinion, is any illness in your school properly attributable to school work?"

This question was answered by all in the negative save in one instance, in which the opinion is expressed that the school work is injurious to the eyes of one pupil. This case is in the German school, where the two languages are pursued at the same time.

Dr. Charles K. Mills, of Philadelphia, has, in the "Annals of Hygiene," published in that city, an interesting paper upon "Over-work in the Public Schools of Philadelphia." His statistics are highly valuable in most respects, but the results obtained by pupils' answers to the questions concerning illness fairly due to school studies, I should deem of questionable value in any system of schools, as the tendency in the pupils' minds would be to charge to school work many things which should be laid to other causes. I preferred to address a like question to teachers, whose observation would discern any marked case, at least, of over-work and resulting illness.

#### MYOPIA.

The effect of school-work upon the eye-sight is a question that has of late years been much discussed in medical and educational circles.

As a means of ascertaining the facts in the case, in many universities and colleges, private and public schools in Europe and in America, examinations have been conducted by medical men. These examinations are made with especial view to determining whether or not myopia or near-sightedness is caused or aggravated by school-room work, or home reading or study, such as students of universities, or pupils of elementary schools, would be required or allowed to do.

In the interest of science, Dr. C. H. Moore, of this city, the latter part of the school year of 1884-85, conducted an examination for myopia in the public schools, as well as in other educational institutions located here. The results of his examination of the public schools are given in the following report:

## PUBLIC SCHOOLS OF RICHMOND, INDIANA.

*Report of Examination for Myopia, Made by Dr. C. H. Moore—March and April, 1885.*

GRADES.	No. in Attendance at Time of Test.	NUMBER OF CASES OF DEFECTIVE VISION.			NUMBER OF CASES OF MYOPIA.			Per cent. of Cases of Defective Vision on No. Enrolled.	Per cent. of Cases of Myopia on No. Enrolled.	Per cent. of Myopia on Defective Vision.	NATIONALITY OF FATHER OF MYOPIC PUPILS.				NATIONALITY OF MOTHER OF MYOPIC PUPILS.				Average No. in Family.	Congenital Myopia.
		Boys.	Girls.	Total.	Boys.	Girls.	Total.				United States.	England.	Ireland.	Germany.	United States.	England.	Ireland.	Germany.		
High School.	58	2	8	10	1	3	4	17.2	6.9	40	4	..	..	..	4	..	..	..	5	..
Eighth Year	76	6	18	24	4	8	12	31.6	15.8	57	12	..	..	..	12	..	..	..	5	..
Seventh Year	117	5	9	14	1	5	6	11.9	5.1	42.8	4	..	..	..	4	..	..	1	5	..
Sixth Year	171	8	15	23	4	5	9	13.5	5.3	39.1	7	1	..	..	7	1	..	1	6	..
Fifth Year	203	14	23	37	5	6	11	18.2	5.4	29.7	9	1	..	..	9	1	..	1	7	..
Fourth Year	257	16	21	37	2	6	8	14.5	3.1	21.6	7	..	..	..	7	..	..	1	5	..
Third Year	326	20	37	57	7	5	12	17.5	3.7	17.5	7	..	..	..	7	1	..	4	6	4
Second Year	278	15	16	31	2	4	6	11.2	2.1	14.4	3	..	..	..	3	..	..	3	5	..
First Year	608	23	35	58	3	5	8	9.5	1.3	13.8	5	..	1	2	5	..	1	2	5	..
Tot 1	2,064	109	182	291	29	47	76	13.9	3.6	26.1	58	2	1	14	58	3	1	13	5.5	4

The results of this examination beyond reporting facts are rather unsatisfactory, as it will be noticed that the percentage of defective vision is larger in the Third grade than in the Fourth, larger in the Sixth than in the Seventh, and larger in the Eighth than in the High School. Whether this is merely a chance congregation of pupils of defective eye-sight in certain grades or not could only be told by a series of examinations, conducted from year to year. It does, however, seem to indicate a slight general increase of defective vision from the first year to the High School inclusive of the latter.

#### RESULTS OF INVESTIGATION.

The results obtained by my investigations do not show an inordinate amount of work done by pupils. The highest amount of work reported in the High School by any individual pupil, including recitation, school preparation and home study is eight and one-half hours. The largest number of each of the three upper classes report seven and one-half hours of work, while the greater number of the first year class report from 5 hours 30 minutes per day to 6 hours 30 minutes all told—both school and home work.

In the Eighth Grade the highest amount of work reported by any individual pupil is two and three-fourths hours of recitation, one and three-fourths hours of study in school, and three hours of study at home—seven and one-half hours in all.

The lowest reports the same in recitation and study in school, and but twenty-five minutes of home work, the majority report from one to two hours of home work. This wide divergence in the amount of home work is readily explained by the fact that United States History is the study required to be prepared at home. The average lesson is from two to three pages of the text-book. The pupil who has a taste for history and a home library at his command, will probably spend one or two hours in correlative reading, while he who is content merely to pass muster on the recitation, or has not the means of research at home may prepare the stated amount in a much shorter time.

It will be observed that in the seventh and sixth grades but little home study is required, and that the majority of the pupils do but little voluntarily. The course of study in Richmond is heavier than in other schools of the State, with perhaps a very few exceptions. If our work is not too heavy, then neither is the work of the graded schools of the State taken as a whole. If school work is to be the main business of life for the children of our schools from six to eighteen years of age, as it is intended to be by the majority of parents, then it is submitted that careful investigation will not show that the average boy or girl is overworked in the graded schools of Indiana.

#### FAILURE OF HEALTH AMONG PUPILS.

But it must be conceded that cases of breaking down occur and that the schools in many instances get the blame. While the required work in our schools may not be overwork for the average boy or girl, yet it may be made so by an ambitious student is his desire to excel, or it may be made so by an injudicious method of study. I have in mind now some cases in the High School, the present year, where, upon information in regard to undue work upon the part of some of the brightest and most ambitious pupils, an investigation was made and the difficulty remedied.

by some kindly advice from the principal of the school as to the methods of study and the proper limitations. I think practical teachers, however, will agree with me in saying that it is not frequently necessary to curb the zeal of pupils from fourteen to eighteen years of age. The spur is oftener needed.

The age of puberty is a critical time, especially for girls, and no doubt many girls should be taken from school, partly or entirely for a season, at this time, especially if there be any hereditary tendency to nervous disorders or insanity. Here, however, the dislike of the pupil to being left behind by the grade leads parents to permit a girl in frail health to attempt work intended for children who are in good bodily and mental condition. That which is easily done by them, and which under better conditions would be easily done by her, proves too heavy a burden, and the schools get the credit of having ruined a child's health by over-pressure.

#### AMUSEMENTS AND SOCIETY DEMANDS.

Another prolific source of illness among pupils of the upper grades and high school classes of all our city schools is found in amusements and society demands. Two years ago, when the roller-skating craze was at its height, considerable complaint was made in the schools in certain grades about the heaviness of the work. Parents complained that their children could not do it. Nor could they, where they were permitted to spend a part of all the evenings of the week at the roller-skating rink. They came to the school in the morning with headache, perhaps having eaten but little, if any, breakfast, dull and spiritless from the reaction from the excitement of the previous evening. Returning with my wife from a call upon friends one evening about 10 o'clock, and, passing a rink, she expressed a desire to look in. We went in. Some special entertainment in skill on rollers was in progress, which lasted about one half an hour. At the end the floor was thrown open to skaters. I noticed perhaps one hundred and fifty pupils of the public schools upon the surface at that time of night. The majority probably did not get home until nearly midnight. The work was too heavy for pupils allowed to keep such hours. That the work of the course is not particularly heavy for such as make a business of school going was shown the last year by the occurrence I shall give.

In the Richmond schools promotions are made twice each year, as they are at Indianapolis, and perhaps in some other cities in the State. Two boys asked permission in the fall to do the work of both classes of the eighth grade, which is justly considered the hardest year's work below the high school. I did not encourage them, but at the request of their parents permitted them to make the attempt. They succeeded admirably, and were promoted to the high school at the mid-year promotion, entering it in good physical condition apparently. A third boy entering the eighth grade at the mid-year promotion asked and was granted the same privilege. He also accomplished the work with no apparent injury to his health. Two of the boys are now in the high school in good standing in their classes, while the third, moving to Western Kansas at the end of the school year, and having picked up a knowledge of stenography during his summer vacations, became, and was when last I heard from him, a stenographer in one of the courts of Western Kansas.

If pupils be allowed to indulge habitually in the excitements of city life the school work will be found too heavy for them. Reaction will follow excitement



and late hours, no difference what the cause. It may be the theater, the roller-rink, the ball room, the excitement of the revival meetings, or religious orgies into which such meetings sometimes degenerate. The effect is the same whatever be the cause. The contest is an unequal one. The pupil, usually a girl, becomes languid and shows ill health. A physician is called. He sees there must be rest somewhere. He prescribes taking her from school. It is done. The schools get the credit of breaking down another pupil. The physician is wise, and I do not say not honest. He knows his patient must have rest. He probably also knows that *society* demands *will* be met. He advises what he has just grounds of hoping will be done. Pupils who do not disregard the laws of health in meeting society demands, in amusements, or in excesses of any kind, may, from constitutional weaknesses or other causes, find it advisable to withdraw from school either temporarily or permanently. It is a matter of regret that any should be compelled so to do, but it is submitted that the work of any school or system of schools must be based upon the capabilities for work of the pupil of good health. No other standard can be taken in public schools, at least.

#### MENTAL CULTURE.

Mind and body are so intimately related, the physical and mental functions so dependent upon each other that what has been said about the effect upon health in general may be applied nearly as well to mental health. The average child will go through the required work of the schools without injury or even danger of injury. There are cases, however, where the work, or perhaps any mental work at all, is injurious.

I quote from the valuable paper of Dr. Mills, in *The Annals of Hygiene*, as follows:

"A form of insanity which has within recent years been studied with care by alienists, is known as Hebephrenia, or the insanity of pubescence, an affection characterized by mental enfeeblement, marked by a silly disposition, following a preliminary period of depression, which has the same tinge as, without the depth of, that characterizing melancholia, which coincides with or follows the period of puberty." It is found in subjects between the fifteenth and twenty-second year, usually, and, as a rule, the termination is unfavorable. Many of the patients pass into a condition of secondary degeneration, from which they never recover. Undoubtedly, our forcing methods of education have something to do with the production of this form of insanity in special cases. Where, particularly, any hereditary predisposition to mental disease exists, the probability of mental overpressure resulting in the development of insanity at puberty or adolescence, should always be borne in mind." "Puberty," said Clouston, "is the first really dangerous period in the life of both sexes as regards insanity, but it is not nearly so dangerous as the period of adolescence, a few years afterward, when the body as well as the organs of reproduction are more fully developed." It is unfortunate that in so many instances the teaching of girls, especially at that age, must be given over to the care of young women whose life experience is limited, who have not acquired that insight into the mind and its workings which mature years and practice gives, as no schools can give. The teacher of mature years, who has gained from experience the lessons that ought to have been gained, will be able to detect an abnormal mental condition in the pupil, and refer failure in lessons or infractions of discipline to the true cause rather than to idleness or perverseness.

The fact that a majority of our schools are taught by women little if any beyond the years of adolescence makes a wise and careful superintendence of the graded school a vital necessity for more reasons than the work of supervising the mere instruction, which is the generally understood duty of the Superintendent of Schools. This, though important, is perhaps not the most important duty of the Superintendent. The oversight of the sanitary conditions of the schools and school buildings, the investigation of mental peculiarities, and a number of kindred duties require wide and varied knowledge, consummate tact, and maturity of mind. In the larger cities it has been proposed that one or more medical assistants shall be placed upon the staff of the general superintendent, to whom should be intrusted the sanitary inspection of the schools. The suggestion is wise and practicable, but for the smaller system of schools the expense puts it out of the question.

Thus such matters must be relegated to the Superintendent. Too often the Superintendent, of the smaller graded school especially, is the aspiring youth fresh from college with the dimmest ideas of every thing outside of the pages of the college text-books. Such a supervisor or principal with a corps of teachers but little past the years of childhood themselves frequently make up the working force of the schools.

That bad results, both physical and mental, do not more frequently follow is certainly due more to the rugged good health, physical and mental, of the pupils than to the wisdom of the management of the school.

#### THE GRADED SCHOOLS IN RELATION TO MORALS.

It is not necessary to enter the field of dispute as to the use or necessity of religious instruction or religious motives and influences in the public school as a means of building character. The question does not affect the graded or city plan of schools more than it does any other. The separation of younger pupils from those who are older, both in the school-room and upon the play-ground, does undoubtedly prevent many of the evils which an unrestrained mingling of younger and older pupils frequently encourages. The worst school of vice of which I have any personal knowledge was the ungraded village school of my boyhood days. The obscene stories that were told in the hearing, and the vile acts that were performed in the presence of younger boys by those who were older would not be possible in any well regulated graded school of the present time. That there are no evil habits picked up at the graded school, that there are no evil communications to corrupt good morals, I would be far from affirming. I am satisfied, however, that the tendency of the graded school is to reduce these evils.

The rigid surveillance of the play-ground during recesses by the teachers, or the abolition of the recess entirely, as in many schools, prevents many things of an evil nature that might otherwise occur, and makes the school life much less potent as a factor for evil than the home or street associations may be.

While the tendency of the graded school is to reduce exposure to immorality, yet, in this respect, there is a weak point in the graded school system, or, rather, a defect as yet to be corrected.

In every place is a class of boys—sometimes girls, too—who, on account of vicious propensities, ought not to be allowed to associate, even under the restrictions of the graded school, with those who are pure and honest. The public school is too often held up as a reformatory institution. This is not its true province. Its work is to prevent crime, to prevent impurity and im-

morality by the correct training of the child. There is a feeling that tolerates too long a time the presence of a vicious boy in the school-room. Reformatory schools should be established in every considerable community to which this class of children should be sent. This school should be provided with the best teachers that could be found, and they should have plenary power in dealing with those intrusted to their care. As it is now, the only remedy the school authorities have in case of a pupil so pronouncedly vicious as to be unfit for further continuance in the school, is expulsion. This is too often, in a spirit of mistaken mercy, delayed until the infection has spread. Were there a school to which such a pupil could be sent when the ordinary discipline of the schools had failed, or should not be applicable, there would be less hesitation in removing a bad example from the school-room. This would cost money, but money spent in such a way would return itself a hundred fold in the efficiency of the school system. Many who, while not amenable to the ordinary discipline of the schools, are still within reach of reformatory influence could, by the special measures possible in such schools, be saved from the utter depravity to which expulsion from school often condemns them.

#### SANITARY CONDITIONS.

A notable advance has been made in school architecture in the past few years. The day has gone by when four walls, a roof, a door, and a window or two would be considered a school-house.

The subject of lighting, heating and ventilating school-houses has become one of the problems of the age, and is receiving attention from the best minds.

The importance to physical and mental health of a well-lighted, ventilated, and beautiful school-room can not be overestimated. The school-room should be an educator in itself. Money spent in beautifying and adorning it, within any reasonable limit, is money most wisely spent. This, always provided that it be not forgotten that the *teacher* is the prime necessity of the school, and that the efficiency of the teaching force must not be impaired for any object, however desirable that object may be in itself.

As to the effect of the graded school system upon sanitary conditions, it must be confessed that it has been both evil and good. School-houses unfortunately, as a rule, do not precede but follow demand. The demand usually must be imperative before it is supplied. In the mere matter of architecture the cost of buildings in cities and towns has of necessity attracted attention of architects and citizens, and in consequence the public school is no longer the barn-like structure of former days, but a building to which all may point with pride. In many instances the desire for external beauty and imposing appearance has led to the sacrifice of important internal arrangements for comfort and health. This has led in many towns and cities to the erection of three-story buildings, with school-rooms on the third floor. Sometimes the high school is placed upon the third floor. If the high school be quartered elsewhere, then some of the upper grades are sent to the third-story rooms. The amount of stair-climbing so required is injurious in the extreme to the more delicate girls who belong to the schools, and especially so at the age when they are compelled to do it. One of the most prominent superintendents of public schools in the State—a gentleman of national reputation as an educator—told me that in his high school three girls broke down physically in one year, unable longer to do the stair-climbing, rendered necessary by the location of the high school in a third-story room.

A third-story may be profitably used for a lecture room, not in daily use, or a cabinet room, but where ground is so easily to be had as it is in our Indiana cities and towns, no school-room should ever be put upon third story floors.

School rooms in cities and towns are in the majority of cases too full.

School population has increased faster than school facilities. As a consequence of this fact we find school-rooms with sixty, eighty, or even a hundred children in space not more than enough for forty or fifty. This is equally ruinous to health and to mental growth. Reports of school authorities frequently contain tables of comparative cost per capita of education in various places, generally with a view to showing that in their particular case the cost per capita is less than in other school systems. Economy is a good thing in school management, but the economy that makes a showing of a low per capita by packing eighty or a hundred children into a room, under charge of a low-priced teacher and calling it a school, is criminal in a mental, moral or physical aspect.

#### THE PROPER SCHOOL-ROOM.

The school-room should have ample floor space, not less than eight hundred square feet for forty pupils. Its ceilings should be of good height—thirteen and one-half or fourteen feet. It is better to make the rooms of moderate size, as the tendency in case of large rooms is to put in a larger number of pupils than can be handled to advantage by any teacher.

The rule in Richmond is forty pupils to a grammar school and fifty to a primary school. Of course exigencies arise when in some instances this number must be increased somewhat, but in other cases rooms will be somewhat short of the standard, so that the average is kept. In my opinion this number is as high as it can be safely made. A somewhat smaller number of pupils to a teacher would be still better.

#### LIGHTING.

An ample number of windows, not fewer than four, should be given to each room. These may be in two sides of the room, or in one only. The seats should be so arranged as to give the light from the left side and back, or from the left side alone. The last method has this advantage—the teacher facing the pupils in a room lighted from side and back is compelled to face the light a great part of the time. In this method the eyes of both teacher and pupils are favored.

The windows should extend to the ceiling, and be of the best glass—a single pane to a sash. Shade fixtures are now so made that the roller of the shade may be shifted from place to place upon the window to meet the requirements of the various hours of the day, while the shade itself may be raised or lowered upon the roller, as in the kind in common use. This allows the light to be introduced from above at times when it may be undesirable to admit light from the entire window.

#### HEATING AND VENTILATION.

A constant supply of pure, warm air should be furnished in the cool months of the year. This may be effected by a good system of furnaces, or by a good heater placed in each room, with a cold air duct leading to it from outside, and foul air registers at the floor leading into the ventilating flues. Steam-heating, except by indirect radiation (which is expensive), can not be commended. The stationary steam coil in a room has all the demerits of a box or common stove, with none of

its advantages. A perfect system of heating and ventilation would keep a school-room constantly supplied with pure warm air, taking from it that which has been breathed without a perceptible current, and without the opening, necessarily, of door or window.

The open fire is a most efficient ventilator, and for moderate weather, is a most excellent way of warming a school room, but can not be relied upon unaided except in early fall or late spring. A building in Richmond, completed the last summer, and first occupied in September, has a grate in each room. Each room has also a good heater, with cold air duct, and ventilating flue. There is also a good furnace, not of the largest size, however, in the basement, for warming the halls and the water-closets. So far, in the rooms upon the second floor, the heaters have been used little, if any, the grates, with the heat from the halls, having proved ample. The ventilation of the building is the most nearly satisfactory of all our school buildings.

#### THE WATER SUPPLY.

This frequently becomes the prolific source of fatal disease. In large cities wells must of necessity become dangerous by reason of the soil becoming saturated with the filth and excrement of a large population. In smaller places the well may from carelessness become poisoned by drainage from the privy vaults or sinks. The utmost care should be used in providing school buildings with pure water. In cities wells should not be used, and in the smaller places they should be so located and guarded as to leave no reasonable doubt as to their safety.

#### WATER CLOSETS.

Where it is possible, water closets should be located in or in immediate connection with the buildings. This prevents exposure to the inclemencies of the weather in obeying the calls of nature, and with proper plumbing may be made safe beyond question, provided sufficient water be used for flushing.

With all teachers the keeping of outhouses in a decent condition is a problem that has caused most anxious thought, and decently kept outhouses are the exception and not the rule. By proper vigilance on the part of teachers and janitors much that is objectionable may be prevented, but with the closets located outside the building it is almost impossible to prevent all.

The peculiar configuration of the ground upon which our newest building, the one referred to above, is situated made it necessary to locate the closets inside the building. They are in a tower which rises above the roof, and which carries the ventilating pipes entirely above the building. The upper and lower floors are each provided with a closet for boys and one for girls, each closet with four compartments, and each of the boys' closets with three urinals. Connected with the closets are wash basins. The floors are laid in encaustic tile and the woodwork is of oak finished just as elegantly as the rest of the woodwork of the building.

The going and coming is orderly, and three months' usage does not show a scratch upon woodwork or defacement whatever. The floors of the closets are as clean at all times as are the floors of the school rooms, and no odor can be detected in the adjacent halls or even in the closets themselves. The moral effect is most salutary, as no one would venture upon any act of obscenity with the chances of detection so numerous. The janitor inspects the boys' closets at short intervals.

during school hours, while the principals of the upper and lower floors look after the girls' closets. This is possible wherever there are water works, and a system of dry closets, now in use in many places, may be used anywhere.

#### CONCLUSION.

Many things might be said in connection with the sanitary arrangements of school-houses. Much has been done in the last few years in the way of sanitary improvements in school buildings, but much yet remains to be done. Much yet remains to be done in the beautifying and adorning of buildings and grounds. Said a little girl, a pupil in the building above alluded to, to her teacher at the close of school one evening: "Oh, Miss — ; please don't make me go home now. It is so bright and cheerful here. Please let me stay as long as you do."

The school room should be as bright and pleasant as the homes of the favorites of fortune; it should be to those not so favored a place to enter with delight and to leave with regret. Everything should tend to render the child's school-days the healthiest and the happiest of life. The community that puts its money freely into provision for the mental, moral and physical development of its children will by so doing become richer and better.

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#### WABASH AND ERIE CANAL.

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From time to time since the autumn of 1885 complaints have reached this office in regard to the condition of the Wabash and Erie Canal, in Daviess County. The Evansville, Washington and Brazil Railroad, in constructing their track through said county, used the towpath of the canal for a roadbed, felling the timber which had grown thereon into the canal, thereby obstructing the natural flow of the water. The water thus became stagnant and the physicians and citizens along the line of the road were of the unanimous opinion that much sickness was caused thereby. In January, 1886, the Daviess County Board of Health made formal complaint to this Board, setting forth the matters alluded to above, and demanding proper relief. Accordingly, in February, a communication was addressed to D. J. Mackey, Esq., President of the Railroad, who promised to remedy the matter by removing the obstructions from the canal. A considerable time elapsed and nothing was done. In July, 1886, the Secretary of this Board visited Elnora and vicinity, in said county, and made a personal in-

spection, and found matters to be as had been represented. The water in the canal had been obstructed and a green scum had formed over it. It had become very foul and offensive, and undoubtedly was very dangerous to the public health. Citizens of that town reported numerous cases of typhoid fever and several deaths from the disease, which they regarded were caused by the condition of the water in the canal. Further correspondence was had with the authorities of the railroad, and after further delay a part of the obstructions were removed, and to some extent a free flow of the water was made. However, full relief is not yet given, and we hope to compel such measures as will remove all cause for complaint. Dr. W. H. H. Strouse, the efficient health officer of the county, espoused the cause of the people, and did all in his power to place the canal in a good sanitary condition and remove the cause of disease from the county. Unless there is a complete compliance with the reasonable demands of the people, the authorities of the railroad will be called upon to answer in court for violation of the Rules of the Board of Health (section 2067 of the Revised Statutes of 1881) in their efforts to give proper relief to the people.

## DISEASES OF DOMESTIC ANIMALS.

Many diseases with which animals are afflicted are communicable to man, and have a decided influence upon the public health, but the statutes now in force do not give the Board that control of diseases of animals which they should do. The Board, in dealing with these diseases, has been obliged to rely principally upon the power conferred in section 4987, which says: "The State Board of Health shall have the general supervision of the interests of the health and life of the citizens of this State."

The Board believes that whenever the health and lives of the people are in danger from any of the animal diseases that the section above referred to gives them power to act, and in accordance therewith, and opinions of the Attorney General sustaining this belief, the Board have directed the *health officers* of the State to "take cognizance of all violations of the Revised Statutes in reference to diseased animals, and whenever any such are found at once cause a rigid enforcement of the laws," and in all cases of infectious diseases in animals occurring within their jurisdiction render prompt assistance in stamping out the malady. The power of the Board of Health to exterminate these diseases is limited. If pluro-pneumonia makes its appearance in a herd of cattle, or glanders attacks a horse, such diseased animals can be placed in quarantine, but not destroyed. (We mean by quarantine that the afflicted animals should be kept on the owner's premises, at least two hundred and fifty yards from the highways and the property of others.) If, however, the owners of such animals should take them out of quarantine without permission from the proper authorities, the Board of Health could then slaughter the diseased stock by the power conferred upon it by the police powers of the State, and also if it should be impossible to quarantine such animals, so that it would be impossible to keep healthy stock in the neighborhood from taking the disease, the Board could under such circumstances kill and destroy the diseased ones. It is easy to conceive how such diseased animals might become a nuisance, *i. e.*, injurious to the health, offensive to the senses and



prevent the free enjoyment and use of property, and be the means of spreading disease in a community.

The Attorney General, in an opinion rendered March 10, 1885, says: "There are times when prevailing plague and pestilence would justify extraordinary proceedings when necessary to arrest their growth and progress without waiting for the dilatory proceedings of court;" also, "the Board of Health may promulgate and enforce such reasonable regulations for the preservation of the public health and the prevention of epidemics and contagious diseases as may be deemed advisable by them, and any person or officer of a corporation neglecting or refusing, after having been notified in writing, to comply with the requirements of such regulations, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined. (Revised Statutes 1881, section 4994.)"

It will be seen by the foregoing extracts from the Attorney General's opinions that when certain conditions exist the Board of Health has extraordinary powers delegated to it to preserve the health and lives of the citizens of the State.

The liability of certain contagious and infectious animal diseases being communicated to man is not the only danger. Many sick animals are slaughtered and their meat offered for sale, in violation of the law (Section 2070, Revised Statutes, 1881), which says:

"Whoever kills, for the purpose of sale, any sick, diseased or injured animal, or who sells, or has in his possession with intent to sell, the meat of any such sick, diseased or injured animal, shall be fined not more than five hundred dollars nor less than fifty dollars, to which may be added imprisonment in the county jail not more than six months."

Notwithstanding the existence of such a law, swine, in which cholera has made its appearance, cattle injured and diseased with tuberculosis, cancers and abscesses, are purchased at a nominal price by mercenary butchers, who slaughter them in out-of-the-way places, on the outskirts of our cities, and dispose of their flesh in spite of the authorities. Every fibre of such an article contains disease germs, and should be avoided as a deadly poison. If it does not introduce disease directly into the system, it will surely create a local disturbance from its poisonous irritation of the stomach and alimentary canal. As the cheapness of the article is its only recommendation, the

poor and needy become its victims, who, if they can not have the luxuries of this life, should have what they partake of as food guaranteed to them as being of the purest quality. We repeat our suggestion of a year ago as a remedy for this evil, the effects of which fall upon the unprotected citizen—the passage of a law establishing abattoirs in all of the cities of the State, to be built outside the corporate limits, and forbid slaughtering elsewhere. All animals, before being killed, should be examined by a competent person, who should also be present during the slaughtering and examine the viscera for disease. The person selected to perform this character of work should be either an experienced butcher or a veterinary surgeon. The latter, when possible, should be chosen, because by profession and education he would be particularly adapted to assume such a responsibility. The educated veterinary surgeon would know that the advancement of his profession would depend upon his being strictly honest in the performance of his duties. The strict enforcement of such a law would relieve the people from the imposition that is now practiced upon them, and meat from healthy animals would be guaranteed to all consumers. Without such restrictions thrown around the business, the people will remain at the mercy of these conscienceless scoundrels.

Within the year four cases of glanders have been reported to this office from Hope, Bartholomew County. The State Veterinarian examined the diseased horses and placed them in quarantine. We are satisfied that there are many more cases of glanders in the State, but our laws are so defective, and there being no appropriation to defray the expenses of an investigation in this direction, we are unable to determine the extent of the disease. It was only by accident that we discovered the cases referred to. Many glandered horses are brought from adjoining States where they would be destroyed if the disease were detected.

Within the year swine plague (hog cholera) has been unusually severe and fatal in all sections of the State. This disease has been a subject of investigation by scientific men for years, and so far they have been unable to give us any definite knowledge of its nature, cause, prevention and treatment. This being the case it is not strange that the disease has been so general and destructive. As our laws do not provide for the destruction of animals affected with pluro-pneumonia, gland-

ers and cholera, and as it is the only method by which those diseases can be exterminated, we respectfully repeat the suggestions made in our last report, that the diseases of domestic animals be placed by law in charge of the State Board of Health, with authority to destroy those effected with contagious and infectious diseases. The next General Assembly should provide for the appointment by the Governor of a State Veterinarian, with compensation sufficient to command the services of a competent one, who shall work under the direction of this department. Pleuro-pneumonia and other contagious and infectious diseases being prevalent among the cattle of several adjoining States, breeders and others interested in this enterprise in which so much capital is invested urgently requested the Governor to do something to protect it. It being made clear that the stock interest was in great peril from the importation of affected cattle the Governor issued the following proclamations :

PROCLAMATION.

BY THE GOVERNOR.

WHEREAS, The Indiana Shorthorn Breeders' Association and numerous citizens of the State have represented to me that a certain contagious and infectious disease, known as pleuro-pneumonia, and other diseases, now exist among the cattle of the States of Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, West Virginia, Ohio, Illinois, Kentucky, Tennessee, Missouri and the District of Columbia, and thereby causing great fear among the cattle breeders of this State that the germ of such disease will be brought from such infected districts into this State;

AND, WHEREAS, It is so further represented that diseased cattle will likely be shipped from infected localities to points within the limits of the State of Indiana, and after remaining at such points for a short period will be shipped to other points without this State as cattle coming from the State of Indiana;

AND, WHEREAS, Such infections and contagions are not known to exist among the cattle now in this State;

AND, WHEREAS, Said Association and citizens have requested me to issue a proclamation, scheduling such infected localities, and prohibiting the importation into this State from such scheduled localities, any live stock diseased, and thereby protect the great and growing cattle interest of this State;

AND, WHEREAS, It is proper that injustice should not be done to those persons whose stock are not diseased by delay in the transportation of their cattle, except to conform to certain reasonable regulations to protect the public interest of this State;

Now, therefore, I, Isaac P. Gray, Governor of the State of Indiana, do hereby issue this proclamation, hereby warning any and all persons, corporations and companies against bringing cattle into this State, and hereby prohibiting the importation into this State of cattle from any of the above named States, except on the conditions and under the restrictions as follows:

**RULE 1.** The shipper or owner of cattle from such infected State shall, before importing into this State any cattle for the purpose of delivery, sale or offering for sale, or being kept within this State, forward to the Secretary of the State Board of Health, at Indianapolis, his affidavit, duly subscribed and sworn to before the Clerk of the court of the county from whence such cattle are shipped, that the cattle shipped from such infected locality are healthy and free from such infected disease; that such cattle have not been in contact with other cattle infected with such disease, and have not been exposed to such disease; that affiant knows the history of such cattle for the period of ninety days before shipment; that said cattle have not for said period of time been exposed to said disease, and also stating where such cattle have been kept for said period of ninety days, and to what place or places within this State said cattle are to be shipped.

**RULE 2.** Such shipper or owner shall at the same time forward to the Secretary of the State Board of Health a duly authenticated certificate from the Clerk of the court from where such cattle are shipped, or from the Clerk of the court of the county where the owner or shipper resides, that the affiant is a reputable person, entitled to credit, and personally known to said Clerk of said court, which certificate shall have affixed thereto the seal of his office.

**RULE 3.** Said shipper or owner shall also at the same time forward to the Secretary of the State Board of Health a duly authenticated certificate from a veterinary inspector, acting under State authority, or other proper authority, certifying to the then present healthy condition of such cattle.

**RULE 4.** The shipper or owner of said cattle shall, before unloading or delivering or selling, or offering for sale such cattle in this State, cause the same to be inspected by a competent veterinary inspector of this State, to be selected or recommended by the Secretary of the County Board of Health, certifying to the present healthy condition of said cattle, which certificate the Secretary of the County Board of Health shall forward to the Secretary of the State Board of Health.

In witness whereof, I have hereunto set my hand and caused the seal of the State to be affixed, at the city of Indianapolis, Indiana, this 10th day of November, A. D. 1885.

ISAAC P. GRAY.

By the Governor :

WILLIAM R. MYERS, Secretary of State.

STATE OF INDIANA, }  
EXECUTIVE DEPARTMENT. }

WHEREAS, Information has reached me that pleuro pneumonia exists in Cook County, in the State of Illinois, and other localities, to an alarming extent ;

AND, WHEREAS, On the 10th day of November, 1885, I issued a proclamation prohibiting the importation of cattle from said State of Illinois and other schedule localities, except on the conditions and under the restrictions therein named ;

Now, therefore, I, Isaac P. Gray, Governor of the State of Indiana, do hereby issue this proclamation, hereby notifying any and all persons that said first named proclamation is still in full effect and will be strictly enforced.

In witness whereof, I have hereunto set my hand and caused the seal of the State to be affixed, at the city of Indianapolis, this 11th day of October, 1886.

[SEAL.]

ISAAC P. GRAY.

By the Governor :

W. R. MYERS, Secretary of State.

*To the President and Members of the*

*Indiana State Board of Health:*

GENTLEMEN—On December 7, 1885, I was commissioned by Governor Isaac P. Gray as Veterinary Surgeon for the State.

Within the year ending November 1, 1886, I examined three hundred and six head of cattle and found them to be free from any contagious or infectious disease.

In March, 1886, we had a report that pleuro-pneumonia was existing near Muncie. A veterinary surgeon from the Bureau of Animal Industry, at Washington, D. C., came to investigate the matter, and found that the disease came from food containing ergot.

In September of this year, Dr. W. J. Womack, of Hope, Ind., reported cases of glanders at that place. On the 29th of September I visited Hope and found four cases. I had the animals, which were the property of Mr. R. Spaugh, safely quarantined.

In October I visited Owen, Putnam and Montgomery counties to examine young cattle, who were reported dying of an unknown disease, which proved to be black leg. Upon holding a post mortem examination and removing the skin from the affected parts it had the appearance of being inflated with air, the muscles of the hind legs black, rotten and easily torn, and all of the internal organs with the same black blood. The heart was flabby and filled with black and coagulated blood. Effusions of a bloody character were in the abdominal cavity.

#### CARBUNCULAR FEVER OR ANTHRAX.

This originates spontaneously in herbivorous and omnivorous quadrupeds, is communicated by contact or inoculation to all warm blooded animals, when they occur under circumstances favorable to the development of the anthrax poison. It rarely, if ever, spreads by contagion, and has raged as a plague in past centuries. It is a blood disease, a fever in which there is a very sudden change in the physical character and physiological properties of the blood, and in which passive hemorrhages, ecchymosis, phlegmous boils, carbuncles and gangrenous complications occur with fatal effect. It originates spontaneously in young animals more readily than in old ones,

in the thriving and vigorous more readily than in weak ones; is apt to attack those that are suddenly changed from spare to liberal keep, and on rich lands that are damp and ill drained.

In September of this year there were seventeen head of cattle died, three miles east of this city, of splenic apoplexy. The animals were brought into our State from Missouri.

Hog cholera has been reported in most of the counties in the State, and fully thirty per cent. of the hogs have died of this disease. The hog cholera of America is the same as swine fever of England. It is an infectious and contagious fever affecting the pig, associated with local diseases of the lungs, the lymphatic glands and mucous membranes of the digestive canal. This disease does not affect other animals. It is caused by the growth and multiplication of minute organism belonging to the numerous order of microscopic fungi in the blood, and is generally agreed, among pathologists, that some parasite plant is at work in hog cholera.

Very respectfully,

E. H. PRICHARD,

Veterinary Surgeon.

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## CHOLERA.

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Cholera having prevailed for several years in Europe, it was confidently expected by many that the history of this pestilence would repeat itself, and that our country would be cursed by a visitation of this dreadful disease during the past year.

The fact that it did not come to our shores is probably due to the precautions taken by the Government, and the extra effort made by the various State Boards of Health.

In order that our State might be placed in the best possible sanitary condition, the State Board of Health issued a circular, which we insert here. Ten thousand copies were distributed, and it was published in the various newspapers of the State; and although cholera did not make its appearance, we are satisfied that the enforcement of this order did much to prevent many diseases peculiar to warm weather.

Asiatic cholera is prevailing in Italy, France, Spain and Japan. The history of this disease is, that whenever it has made its appearance in Europe sooner or later it found its way to this country, and already one or two suspicious cases have been reported in the United States.

The Indiana State Board of Health feeling that there is greater danger of its extension to our shores this year than last, and comprehending the destruction of human life that a visitation of this pestilence would cause, recognize the necessity of placing the State in such a sanitary condition that if cholera comes it will find no soil within our borders to propagate its germs. By maintaining good sanitary conditions throughout the State the prevalence of other diseases peculiar to warm weather will be lessened.

It is therefore directed that all County, City and Town Boards of Health observe the following :

1. Make a thorough sanitary survey of their respective jurisdictions.

2. See that all accumulations of filth, decaying animal and vegetable matter in roads, streets, alleys, door yards, vacant and unoccupied lots are removed.

3. That all gutters and drains are kept open and clean, and that they are frequently flushed, and disinfected whenever practicable.

4. That all privy vaults, sinks, cesspools, foul cisterns, stagnant ponds, hog pens, foul stables, unwholesome cellars, manure piles, dirty yards or lots, foul sewers, and all other places suspected of being injurious to the public health, are thoroughly cleaned, disinfected and purified.

5. That all rank vegetation along streets, sidewalks and gutters of cities and towns, is cut and destroyed, and not left to rot.

6. Attention is directed to the importance of compelling the proprietors of steamboats and those in control of railway property, owners of hotels and boarding houses, landlords, school officials, sheriffs, city councils, town trustees, and others in control of property to thoroughly clean and disinfect their premises, and prepare suitable water-closets for their patrons, employes, tenants and scholars, and frequently disinfect them.

7. Attention is called to the necessity of making frequent inspections of all vegetables, fruits and other articles of food



offered for sale. Tainted vegetables and fruits are frequently sources of disease during warm weather.

8. The carcass of any dead animal, or the offal from slaughter houses, packing houses or fish houses, putrid animal substance, or the contents of privy vaults, be not placed upon public grounds, market place, common, field, lot, road, street or alley, or into any river, pond, canal or lake.

There should be thorough whitewashing, drying, ventilating and disinfecting of all parts of habitations by the citizens of the State, so that the high standard of health that has existed during the past year may be maintained. The water supply of the State should receive especial attention, and be carefully protected from pollution by seepage from foul places and surface washings. Water being the readiest medium through which cholera and typhoid fever spread, the absolute necessity of sacredly protecting it from contamination is apparent.

The Health Officers are directed to take immediate steps for the prosecution of any one resisting the execution of these orders as provided in sections 2065 to 2075 of the Revised Statutes of 1881, inclusive.

By order of the Board.

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## SANITARY SUPERVISION OF RAILROAD PROPERTY.

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The geographical position of our State is such that it has virtually become a net-work of railroads, which annually carry thousands of immigrants. Pestilential diseases like cholera and small-pox invariably follow the line of commerce and travel, so that if either comes within our borders, they will undoubtedly be brought to us by way of our railroads. As we are not provided with a system of immigrant inspection, railway property becomes a special object of sanitary supervision. Health officers should use extra vigilance in the inspection of buildings and grounds belonging to railroad corporations, and see that they are kept in good sanitary condition; observe that depots are properly situated, ventilated, clean, and abundantly supplied with pure water; also see that urinals and water-closets are suitably located, with sufficient capacity to accommodate the

traveling public; kept free from foul odors, so that they will not offend the senses of the sensitive and delicate. The grounds should be well drained, and kept free from filth and stagnant water. The water supply should be carefully guarded, and its source, whether it be a well, spring, stream, or lake, should not be used if a cesspool or privy vault is situated within fifty feet of it. The liability to contamination is too great.

When a vault or cesspool is located within this distance of a water-supply, it should be abandoned, cleaned and filled with dry earth (which is an excellent disinfectant), and new ones provided, situated at the proper distance, made water-proof, and kept inoffensive by disinfectants and ventilation.

Passenger coaches used in the transportation of immigrants should be thoroughly cleansed and disinfected upon the termination of each trip. Saloon closets should be well ventilated, kept clean and free from odors; their floors should be either well oiled or painted, to prevent moisture from soaking into the wood. All passenger coaches should be aired, and their closets disinfected at least once each day. Cattle pens should be kept dry and as free from foul odors as possible by drainage, cleaning and the free use of chloride of lime, or some other equally reliable disinfectant. Foul and filthy cattle cars should not be allowed to stand on the tracks within the corporate limits of any city or town, or near any habitation.

Health officers should be vigilant, and see that these requirements are complied with.

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## SANITARY INSPECTION OF SOUTHERN PRISON AT JEFFERSONVILLE.

BY DRS. SEAWRIGHT AND BOOTS, STATE BOARD OF HEALTH.

We visited the prison as directed and made a thorough inspection of the premises and their surroundings. The first thing that attracts attention is the general uninviting appearance of the immediate vicinity of the prison. It is built upon a low, wet piece of ground. While this is true, it is upon a higher level than the city of Jeffersonville. Nevertheless the surrounding ground is of a low and marshy character, which from its appearance and condition is not such as we would select for a healthy location. The diagram which is made a part of this report will more fully explain the situation of the different buildings, sewers, etc., than we could do with words. The buildings and walls here represented by lines drawn in red ink are built of brick, those in black ink of wood. Everything inside of the walls is clean and in as good a condition as it seems possible under all the circumstances to so make it. The cells and cell-houses are clean, the bedding in a good condition, indicating that every effort is made to keep these apartments in a good condition. Buckets are used by the prisoners as receptacles for excrement, when confined in their cells during the night, which are emptied each morning into a large pool or vat marked P on the diagram, at the north side of the prison. From this it is conveyed into the sewer immediately outside of the walls. This emptying place is kept supplied with a liberal quantity of copperas. For day use privies without vaults are used. These are thoroughly disinfected and often cleansed. The waste water and fluids from the different manufacturing shops are carried through open brick gutters to the sewers outside. All of these gutters that carry waste from the shops that is offensive have a quantity of copperas in the bottom. As far as the general sanitary condition of the prison is concerned we can find but little fault. The building, sewers and surroundings are not what they should be, being a disgrace to the State and an imposition on the citizens of that vicinity. This is especially the case with the sewers, or rather the miserable makeshifts called sewers. There is but one covered sewer leading from

the prison, and it is a poorly constructed dilapidated brick affair, which has in many places been broken and injured. It is only a few inches beneath the surface, consequently there is but little obstruction for sewer gas to escape and pollute the atmosphere of the surrounding neighborhood. We found abundant evidence that such was the case, from the amount of sickness in Jeffersonville and vicinity. The sewer leaves the prison on the north and runs in a northwesterly course for about twenty-six hundred feet where it empties into a ravine. By referring to the diagram, upon the north, immediately outside of the prison walls, will be seen represented an open ditch running a westerly course. This serves as a drain from the hog pens and carries surface water and waste water from the western side of the prison. On either side of the avenue, east of the prison, are what are called open sewers, being in fact only side ditches or gutters. The one on the west side of the avenue is used to convey waste matter from that side of the prison and as a house drain from the Warden's and Deputy Warden's residences. While the Warden told us that he had it cleaned often, and it bears evidence that such is the case, it is at best only a foul gutter carrying a sluggish stream of filth from which emanates unpleasant odors. The prison authorities have no means of flushing these sewers and gutters, and even if they had from their nature it would do but little good, as it is impossible to keep such poorly constructed channels clean.

It seems to us as if the State is amply able to construct a main sewer to the river. This, with a suitable number of covered drains within and without the walls, to convey all waste to this large main outlet and thus carried to the river, would prevent the pollution of the air by the waste and filth that must of necessity arise where five or six hundred persons are confined in one place. The ground immediately west of the prison inclosure is low and wet, and seems to serve as a general dumping ground for all manner of filth and trash for the surrounding neighborhood. The ground lying just north of the prison is also a level place, the character of which would not be a desirable location for building.

Taking everything into consideration, it makes a very undesirable locality for a prison, and it might be well for the proper authorities to take this into consideration before making necessary repairs and alterations.

## HOSPITAL FOR INSANE, AT RICHMOND.

This building is as yet incomplete, only a small portion of the plumbing being done. We examined such pipes as were placed in position and the plans and specifications of the plumbing work. We learned that all pipes are to be exposed in such a manner that any defect may be very readily observed and repaired. The ventilation of the buildings seems to be perfect in every particular.

The heating apparatus is placed in the basement, from which the heat is conducted into the flues and corridors. From the corridors it is conducted through doors (the upper parts of which are made of open grate work) into the rooms, so that each one may be heated evenly and thoroughly. Each room has a foul air flue that will change the air in a sufficient time to keep it in a healthy condition.

In the large rooms the heat, instead of being admitted through the doors, is brought into them by flues and registers, and as an additional means of heating and ventilation have open fire-places.

The main sewer outlet stops at this time about sixty rods from the nearest building, and is said to have about eighteen inches fall in that distance. It is below the water line beneath the building, and there is consequently a continuous flow of water through it of three inches in depth. We were told that this sewer was to be continued further, but one thing is evident, however, and that is that this sewer can not discharge its contents anywhere near its present terminus without becoming a nuisance, and probably be attended by dire results to the community. The nearest stream is but a small, sluggish creek, running through farms, and to empty sewer contents into this of course would not be tolerated. The nearest accessible point to White Water Creek is three miles distant, and is the only place that we could see that the sewage could be safely carried and discharged, and whether this is practicable or not we are unadvised.

They are contemplating the fertilizing system in disposing of the sewage, and in our judgment this is the wisest plan.

## INSPECTION OF NORTHERN PRISON.

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BY DRS. LOMAX AND FRITSCH.

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Pursuant to a previous order of this Board, Dr. W. A. Fritsch and myself made a visit of inspection to the Northern Prison at Michigan City, on the 27th of August last. Arriving at the prison building we met Mr. James Murdock, the genial Warden, whose courteous treatment in cheerfully extending every facility for forwarding the object of our visit, brought to view everything which might in any manner affect the health of the convicts—inviting the most thorough inspection of every apartment and appointment in the institution—at once relieved us of all restraint of ceremonial formalities which might in the least interfere with the fullest performance of the duties of our mission. In fact his gentlemanly demeanor made the inspection rather an enjoyable entertainment than an unpleasant performance.

Upon entering the inclosure everything presented an air of neatness and cleanliness hardly to be looked for in the equipment of a legal purgatory of the rankest depravity civil government permits to go unhung. It was rather an agreeable perspective to behold. The walls inclosing the premises are solid, massive masonry, which send forth an expression of uncompromising purpose of fidelity to the duties committed to them. The various buildings for the custody of the convicts, the cell-houses, factories, and all structures necessary for the convenience of the men in prosecuting the different industries of the prison, were not only substantial, but conformed in design and appointment to the strictest requirements of prison hygiene and prison æsthetics. The premises and appurtenances were as stylish as public economy could well tolerate. The courts and open grounds were swarded in neat lawns, threaded by a net-work of walks into symmetrical areas, with here and there a tasty floral decoration. No rubbish is permitted to mar the agreeable perspective, nor offensive odor to offend the senses. An indispensable requisite to cleanliness in quarters of large assemblages of men, is a bountiful supply of pure water.



And this condition is fully guaranteed by the inexhaustible resources from which the water supply is obtained. The rainfall upon the extensive area of roofing, collected in cisterns, furnishes an ample supply for all purposes where soft water may be required, while a direct communication of the water works with the lake gives an unfailing supply for all ordinary wants, or the demands of any possible emergency. In addition to these, there is an artesian well in the midst of the grounds of a depth of 541 feet, furnishing a flow of seven hundred gallons of water per minute.

This volume of water constantly flushes a capacious sewer, carrying away the accumulated filth, offal, washing and redundant fluids of the entire premises. It possesses mineral qualities said to be disinfectant in chemical action upon decaying organic substances. The sewer is four feet in diameter and made of brick. The mineral with which the water is impregnated readily corrodes iron, unfitting this metal for sewer purposes. The head of the sewer is four feet beneath the surface, and its exit from the premises is eight feet, with openings at convenient distances for the disposal of excreta and other substances liable to pollute the atmosphere. It empties into a creek, some distance below the prison wall, by which its cargoes are borne into the lake. Everything which could, by decomposition or decay, in the least pollute the air which the men are compelled to breathe or deteriorate the health of the inmates is most scrupulously provided against. Nothing could well be added to the ample provisions already in operation to insure perfect immunity from pestiferous emanations almost absolutely inseparable from so large a collection of human beings in so small an area. We found some seventeen factories in operation, distributed among shoe, hosiery, chair and cooper manufacturies. The character of the work requires no great draught of muscular energy to manipulate it. Light, dexterous movements in the diversion of labor assigned each operative is all that is necessary to yield profitable results. A briskness of work and cheerfulness of manner observable in the men indicated an acquiescence in the situation. The floors were clean, shops well ventilated and free from offensive odors.

At the time of our visit the Warden reported six hundred and ninety in prison. Of these six were off duty on account of sickness. For the fiscal year ending October 31, 1885, the

annual report of the officers gives the average number of prisoners as *seven hundred and three*, of which *five hundred and seventy-two* were *intemperate* in their habits when brought to the prison and *one hundred and thirty-one* *temperate*. Of these *two hundred and ten* were reported syphilitic and one hundred and forty gonorrheal. Of the entire number there were only eight deaths during the year. One of these was a case of suicide by hanging and one from old age. No two of the deaths were from the same cause. Nor can it be concluded from the physician's report that any of the fatal cases were from acute diseases or originated in conditions inherent to the Penitentiary. The following are the diseases of which they died: Embolism, blood poison, phthisis, epileptic insanity, ascitis, chronic cystitis, with those of suicide and old age. Not one died of disease originating in idio-miasmata or emanations from over-crowding.

When we consider the number who were habitually intemperate, and add to this the large per cent. of constitutions depraved by loathsome venereal diseases, and see that of the entire number there were only six deaths from actual disease in twelve months, it seems truly a marvel in sanitary and medical history. The physician and Warden attribute this remarkable result largely to the artesian water of the place. It is used by some as a beverage, and by all affected with diatheric diseases as a tonic and alterative both internally and externally as a bath. The physician and Warden, who are very sensible observers, regard it as a remedy of invaluable merit in phthisis, syphilis, rheumatism, etc.

Of the entire number of convicts, thirty were committed for crimes prompted by sexual propensities, and three for criminal attempts to escape the expense and scandal consequent upon such indulgence. The dreary prison life, where so many are congregated without permission of speaking one to another, presents a somber, social state inviting gloomy reflections and thoughts and indulgence in unnatural gratification of normal propensities, which in subjects of low moral tone and feeble powers of self-restraint, are apt to culminate in the practice of pleasurable secret vices. Hence, masturbation, we were told, is a prevailing habit among the younger portion of the convicts. The remedy for this evil is only to be found in moral discipline, and is to be committed to the services of the Chaplain.

There were forty-nine baths in the bath house. All the men are required to bathe once a week in soft water ; also to change their apparel and bed clothes as often. Water-closets are connected with the shops for the convenience of the men when at work. The excreta is deposited in buckets and emptied in the main sewer. The buckets used for this purpose, as well as the openings in the sewer, when soiled are disinfected by the free use of lime, and were free from unpleasant odors.

Our special attention was given to the inspection of the two large cell buildings, for the safe lodging of the convicts at night. The pavements around them were clean and sweet, being thoroughly washed once or twice a week. The cells were provided with single beds, ticking filled with straw, and changed at stated times as the straw may become worn and impure from use. The beds are furnished with clothing adequate to the comfort of the occupants, which is washed and changed once a week, as above stated, by order of the prison government. A commendable cleanness of the cells is maintained as a rule. But where so many convicts are congregated together, a great diversity of individual tastes and peculiarities will be found to exist. Some will be cleanly and neat in prison and apparel, while on the contrary others will be careless and slovenly. Hence, while the berths of some were tidy, neat and arranged with taste, the bedding of others would be left in promiscuous heaps, not admitting a free permeation of air, and consequently emitting a more or less offensive odor of the persons occupying them. The manner of keeping the beds is necessarily left to the individuals themselves, and is certainly quite as good as could be expected of the class of persons occupying them.

The cells are provided with simple furniture for the convenience and comfort of the men, and also with candle light for reading until the hour of bedtime. Each cell is furnished with a night bucket, into which the excreta is deposited, when the bucket with its contents is placed in a small chamber in the wall, made as nearly air tight as possible by a closely-fitting sliding door to prevent offensive odors from contaminating the atmosphere of the cell, vent pipes passing in the walls from these chambers deliver the effluvia of the cells above the roof of the building.

We found the culinary department and dining-hall in good condition. The commissariat was ample as far as appeared to

us. The food was plain, nutritious, wholesome and well cooked. The staple meat is pickled pork. Fresh beef is issued three or four times a week. Poultry, fish and mutton are frequently served. We took supper in the dining-hall of the prison, a repast similar to that of the men, which, was substantial and wholesome.

The hospital is located immediately above the kitchen, which suggested the liability to annoyance of the sick by unpleasant odors from the room below. But the physician assured us that no such odors were ever detected in the apartment. Thorough ventilation kept the atmosphere of the room perfectly pure, he said, while in cold weather the kitchen maintained a more equable and pleasant temperature. This being the case, of which we were not perfectly free from misgivings, would exempt it from serious imputation.

An army of convicted criminals dressed alike, tonsured alike, taciturn alike, from not having the privilege of speaking to any one, would appear to a stranger a morose, guilty-looking set of men. But they give themselves to steady, active systematic work. Their tasks are not burdensome. They do not involve great tax of muscular energy, but light, brisk movements, easily performed without exhausting their physical forces. They appear to give themselves with a will to the useful industries distributed among them. The State has provided liberally for their health and comfort, and for returning them to honest and honorable avocations as good citizens. It has also provided for the peace and safety of communities in the enforcement of the penalties prescribed for misdemeanors. The executive functionaries intrusted with enforcing the penalties adjudged the convicts appear to temper their authority with kindness, wisdom and firmness.

There appeared to be no unfriendly feeling between those governing and those governed. A healthy morale seemed to pervade the institution. The provisions for preserving health are ample, and dispensed with praise-worthy wisdom and humanity.

## STATE HOUSE PLUMBING.

In obedience to the resolution passed by the Health Officers' Convention, the State Board of Health employed an expert plumber of twenty years' experience to assist its members in making the examinations demanded. These investigations resulted in the discovery of many defects in the house drainage and plumbing of the building, which are clearly set forth in the following communication addressed to the State House Commissioners:

*To the Honorable Board of State House Commissioners:*

GENTLEMEN—The following resolution was introduced by Dr. Jas. F. Hibberd, of Richmond, Indiana, and unanimously adopted by the conference of town, city and county health officers, held at Indianapolis, February 18, 1886, to-wit:

WHEREAS, Henry T. Hudson, President Journeyman Plumbers, Steam and Gas Fitters' Association, of Indianapolis, has made public declaration that the plumbing in the New State House of Indiana is imperfect and dangerous; and,

WHEREAS, The act of March 7, 1881, establishing a State Board of Health, provides that said Board "shall, when required, or when they deem it best, advise officers of the government or other State Boards in regard to the location, drainage, water supply, disposal of excreta, heating and ventilation of any public institution or building;" therefore,

*Resolved*, That it is the sense of this convention that the Board of Health should institute such inquiry as shall determine, with certainty, whether or not there is anything defective in the sanitary arrangements of the State House now under construction, and if anything defective be found in the ventilation, plumbing or drainage of the building or grounds, advise the State House Commissioners of the nature, extent and consequences of the defect, and what should be done to remedy it.

In accordance with this resolution, this Board, within the past two months, have several times visited the State building now being constructed under your supervision, and through the medium of their Secretary and a practical plumber em-

ployed by them, have made a careful examination of the system of plumbing and house drainage made use of, and found the following defects to exist:

*First.* A brick sewer four feet in diameter passes from east to west beneath the building. This sewer is so large that it can not be thoroughly flushed, and if it could be so flushed, this Board would not approve of a sewer passing beneath any building, either public or private, which is to be occupied by human beings, as it imperils the lives of the inmates. It is unsanitary, and not in keeping with the teachings of modern authorities on sanitary science.

*Second.* The soil, urinal and wash-stand waste pipes and down spouts enter the sewer by separate connections beneath the building. This is contrary to the latest and most approved methods of the disposal of sewage.

*Third.* The enamel-lined iron waste pipes from urinals enter vitrified earthen pipes in the cellar. The joints being made with Portland cement, are liable to become defective by the contraction and expansion of the iron.

*Fourth.* In the cellar northwest from the dome a down spout was found with its sections slipped into each other, and the joints were not sealed, leaving an opening for sewer gas to escape, that is if the down spouts were to be employed as ventilating shafts to the sewer.

*Fifth.* The down soil pipes are five inches in diameter, and the branch-off pipes to the same four inches. The branch pipes should be the same size as the soil pipes which they enter, otherwise the down pipes can not be thoroughly flushed, it being impossible to flush a five-inch pipe with a stream of water passing through a four-inch pipe. Authorities on sanitary plumbing say that a soil pipe four inches in diameter is sufficiently large for any building.

*Sixth.* We found no provision made for venting urinal or wash-stand traps.

*Seventh.* The only provision made for venting the traps to water closets, as far as we were able to discover, is into the safe waste pipes. In doing this the safe waste pipes are befouled, and virtually converted into soil pipes. Traps of this character should be vented by a separate pipe carried up through the roof.

*Eighth.* In the closet-room west of the south entrance the soil pipe enters a brick flue and extends into the same only two or three feet. This flue opens into the attic even with the floor and does not extend to the top of the building. In no instance (because it is unsanitary) should a soil pipe enter a flue or chimney constructed of brick, as any noxious gases that may escape from these pipes will permeate the bricks and pass into the rooms of the building.

*Ninth.* We found in the attic on the west side that the soil and safe waste pipes entered a flue which had five grates beneath. Also, at the north end the soil and waste pipes enter the main chimney.

*Tenth.* This Board does not approve of the system as they found it, of the plumbing and house drainage made use of in the construction of the building now being builded under your supervision.

We have been informed by a member of your Board that many of the defects that existed at the time of our inspection have since been corrected, and that other improvements are contemplated.

We understand that the water closet traps are to be vented by separate pipes, and not in accordance with the original intention through the safe waste pipes. We hope that the sanitary defects pointed out will be corrected, so that the healthful condition of the building may be insured, and the citizens of the State be benefited thereby.

By direction of the Indiana State Board of Health, I submit the foregoing for your consideration.

C. N. METCALF,  
Secretary.

APRIL 23, 1886.

*To the Honorable State Board of Health:*

GENTLEMEN—Your report, submitted to the State House Commissioners, of what you designate as defects in the State House plumbing, was received on the 23d of April, 1886.

Through the medium of the city newspapers, of the 21st of April, the Commissioners received the report to your Board of J. C. Dunn, of Indianapolis, employed by you as an expert plumber, to examine the work in the building, containing a

similar statement of defects in the plumbing. The State House Commissioners regret that their time, since the receipt of your report, has been necessarily consumed in examining bids and awarding contracts for furniture, gas-fixtures, electric clocks and frescoing for the building, so that they could not reply to it at an earlier day.

The report of your Board contains ten specific items of defective plumbing, as follows:

*"First.* A brick sewer, four feet in diameter, from east to west, beneath the building. This sewer is so large that it can not be thoroughly flushed, and if it could be so flushed, this Board would not approve of a sewer passing beneath any building, either public or private, which is to be occupied by human beings, as it imperils the lives of the inmates. It is unsanitary and not in keeping with the teaching of modern authorities on sanitary science.

*"Second.* The soil pipes, urinal and washstand waste pipes, and down-spouts, enter the sewer by separate connections beneath the building. This is contrary to the latest methods of disposing of sewage.

*"Third.* The enamel-lined waste pipes from the urinals enter vitrified earthen pipes in the cellars. The joints being made with Portland cement, are liable to become defective by the contraction and expansion of the iron.

*"Fourth.* In the cellar northwest from the dome, a down-spout was found with its sections slipped into each other and the joints were not sealed, leaving an opening for sewer-gas to escape, that is if the down-spouts are to be employed as ventilating shafts to the sewer.

*"Fifth.* The down soil pipes are five inches in diameter, and the branch pipes to the same four inches. The branch pipes should be same size as the soil pipes which they enter or otherwise the down-pipes can not be thoroughly flushed, it being impossible to flush a five-inch pipe with a stream of water passing through a four inch pipe. Authorities on sanitary plumbing say that a soil pipe four inches in diameter is sufficiently large for any building.

*"Sixth.* We found no provision made for venting urinal or washstand traps.



*“Seventh.* The only provision made for venting the traps to water-closets, as far as we were able to discover, is into the safe waste pipes. In doing this the safe waste pipes are befouled and virtually converted into soil pipes. Traps of this character should be vented by a separate pipe carried up through the roof.

*“Eighth.* In the closet room west of the south entrance, the soil pipe enters a brick flue and extends into the same only two or three feet. This flue opens into the attic, even with the floor, and does not extend to the top of the building. In no instance (because it is unsanitary) should a soil pipe enter a flue or chimney constructed of brick, as any noxious gases that may escape from these pipes will permeate the bricks and pass into the rooms of the building.

*“Ninth.* We found in the attic on the west side, that the soil and safe waste pipes entered a flue which had fire grates beneath; also at the north end the soil and waste pipes enter the main chimney.

*“Tenth.* This Board does not approve of the system as they found it of the plumbing and house drainage made use of in the construction of the building now being built under your supervision.

“We have been informed by a member of your Board that many of the defects which existed at the time of our inspection have since been corrected, and that other improvements are contemplated.

“We understand that the water-closet traps are to be vented by separate pipes, and not in accordance with the original intention through the safe waste pipes.

“We hope that the sanitary defects pointed out will be corrected so that the healthful condition of the building may be insured, and the citizens of the State benefited thereby.”

The report of your expert plumber also contains ten specifications of defects as follows:

*“First.* There is no fresh air inlet to soil and waste pipes.

*“Second.* The safe waste, which is a two-inch cast iron pipe, is made to do double service, that of a waste from safes, and also to ventilate the traps of the water-closets and urinals. I find on one line of soil pipes, at the northwest corner of the dome,

twenty water-closets and twelve urinals all vented by this two-inch pipe, and the same pipe is to be for the safe waste on that line of pipe.

*"Third.* On the first floor is the closet-room west of the south entrance. There are four water-closets vented into a brick flue, the soil pipe extending up only about three feet above the floor to where it enters the flue. This flue is not plastered, but has been washed over with a thin coat of hydraulic cement put on with a brush.

*"Fourth.* At the extreme north end of the building I find that the safe waste vent pipe is connected with the soil pipe, and then the soil pipe enters the large smoke stack.

*"Fifth.* I find that the four-inch waste pipe from several urinals is run up and vented into a brick flue. The same flue has one or more fire-grate openings.

*"Sixth.* Three water-closets are vented into another brick flue with grate openings.

*"Seventh.* The waste pipes, down spouts and overflow pipes from the tanks connect in the cellar with the ordinary stone sewer pipe, and then run into the sewer. These pipes are now connected and lie exposed on the top of the ground.

*"Eighth.* In the closet-room, near the southwest corner, I found one joint of the safe waste and vent pipe loose, not having been properly calked.

*"Ninth.* Traps are placed in the cellar at the bottom of each stack of soil and waste pipes, and there is no fresh air inlet; the pipes become air bound and the free passage of the water is checked.

*"Tenth.* I find that some of the flues which the soil and waste pipes enter for ventilation do not run out through the roof, but are to be kept open even with the floor in the attic, where a number of ventilating flues for the different rooms are open in the same manner. I find a number of joints in the soil and waste pipes that were not more than about half full of lead, putty being used to fill them."

The reports, both of your Board and your expert plumber, give the impression that the plumbing described is already completed, when, in fact, some pipes are not yet in the position required by the specifications. They have reached various levels,

and it will require some time yet before all of the plumbing can be in its proper place. The Commissioners referred the reports of the Board of Health and of the expert plumber to the architect and superintendent of the building for their examination, upon which they have submitted the following report:

*To the Board of State House Commissioners:*

GENTLEMEN—In compliance with your request, to carefully examine the report of J. C. Dunn, Plumber to the State Board of Health, on the plumbing of the new State House, we respectfully beg leave to submit the following:

*First.* All soil and waste pipes are trapped at the bottom; fresh-air inlets are not provided for, as it is not believed best to do so under existing circumstances. In this latitude cold-air inlets would freeze the traps in the winter time.

*Second.* The safe waste in no instance is to do double service, that of a safe waste and of a vent for traps. The traps are vented by separate pipes put in for this purpose only.

*Third.* A brick flue on the first story is used as a vent-flue. This flue has no grate openings, and is not connected with any other flue; and it extends up and through the roof when completed.

*Fourth.* At the extreme north end of the building, a safe-waste vent-pipe and a soil vent-pipe enter the large smoke-stack. Such connections are universally adopted and approved by sanitary engineers. The connection of a soil-pipe with a smoke-stack, we suppose, needs no explanation, as any sanitary engineer would approve this method.

*Fifth.* The expert was shown some pipes ventilated in the manner indicated in his report, and was informed at the time that this mode of ventilating was contrary to the requirements, and would not be accepted. The contractors did this work contrary to the specifications, and the work was condemned by the Architect as soon as discovered, and ordered to be taken out, which has since been done.

*Sixth.* There are no water-closets vented into brick flues with grate openings.

*Seventh.* Some of the stoneware pipes in the basement are exposed at present, but will be covered as we progress with the building.

*Eighth.* At present all of the vent-pipes are level with the attic floor, but will be topped out through the roof, as required by the specifications.

In conclusion, referring to the report of J. C. Dunn, we beg leave to state to your Board, that the plumbing in the new State House is yet in an unfinished state of construction, and the charges made are mostly based on work not finished, but in course of construction.

Referring to the communication of the State Board of Health to your Board, in reference to the plumbing of the new State House, we respectfully submit the following:

Soil and waste-pipes throughout the building enter the sewer by separate connections, which, in the opinion of the State Board of Health, is contrary to the latest and most approved method of house-drainage. We beg leave to state that, aside from ordinary precautions, the plumbing in this respect has been arranged in accordance with the cardinal requirements of perfect house-drainage. Cast-iron waste-pipe for urinals, four inches in diameter, enter vitrified stoneware pipes eighteen to twenty-four inches below the basement floor-line. The temperature at this level is constant, and in no case will the expansion or contraction of a four-inch cast-iron pipe cause a leak at this joint.

The charges, 6, 7, 8, 9 and 10, have been substantially answered above.

Respectfully submitted.

ADOLPH SCHERRER, *Architect.*

J. G. PENDERGAST, *Superintendent.*

The report of the Architect and Superintendent shows that the expert plumber, in his second, fifth and sixth specifications of defects, has misrepresented the facts. There is no such plumbing in the specifications, and none such was ever intended. In his first, third and fourth specifications he states the construction truly, and the Commissioners are glad to know that such methods are now pursued by the most experienced sanitary engineers of the country. The expert, in his seventh specification, exhibits either ignorance or deception.

It seems strange that an expert plumber should not know that the basement floor would cover the pipes under it, and if he did he tried to create the belief that there was something wrong in their position.

His *eighth* specification of a loose joint is no doubt true, for several loose joints have been discovered before, and even after they were properly repaired have again been found wrenched apart.

For protection of the work the Commissioners have been obliged to employ detectives to discover the author of the mischief.

The expert, in his *ninth* specification, repeats his first, giving as his reason why a fresh-air inlet should be provided that "the pipes will become air-bound and the flow of water checked." To do this the refuse matter passing through the pipe must consolidate into a piston air-tight. The probability of such a thing is so remote, not to say ridiculous, that it would be hardly wise to introduce cold air and freeze the trap in order to prevent it.

The expert, in his *tenth* specification, makes a false statement when he says that the flues into which the soil and waste pipes enter "are to be left open even with the floor of the attic." He well knew that when the plumbing was finished the pipes would be carried through the roof.

In the report of the Board of Health, the first defect they mention consists in the sewer being placed under the building. The following communication from Mr. Levi R. Green, a sanitary engineer of large experience, whose opinions in such matters are highly valued by sanitary engineers throughout the country, will show that the objections to the sewer by the Board of Health have no real foundation:

INDIANAPOLIS, IND., April 26, 1886.

*To the Honorable Board of State House Commissioners:*

GENTLEMEN—I have the honor to acknowledge the receipt of your communication of this date, inclosing copy of a published communication from the State Board of Health, and asking me to examine the plumbing work of the State House, so far as completed, and the specifications therefor, and to state what in my judgment is the character of the material used and the system employed, in a sanitary view.

In reply I have to say that in company with and by the assistance of the architect, I have examined carefully the work, so far as performed, and have examined the specifications for

the completion of the work. Having had a somewhat extensive experience, both as a contractor and consulting engineer for such work, it occurs to me that unless the inspector and critic of the State House plumbing be an eminently practical man, he will, in its present unfinished condition, be easily led into error as to its ultimate design of operation.

The principal objection named by the Board of Health is the fact that the main sewer, four feet in diameter, passes directly under the building, and being four feet in diameter, is not wholly "flushed" by any quantity of water passing from the soil pipes, and the Board of Health "do not approve of a sewer passing under any building, public or private."

I learn that the main sewer in question was designed and put in by the City Engineer, and was built under his personal supervision; that in view of the building and the grounds occupying two whole squares, and that the distance and grade at which the smaller pipe would have to be carried to meet a sewer without the building, with all the possibilities of derangement in such design, the present plan was adopted; that it was planned that the "down spouts" from the roof, carrying the rainfall of an area of two acres, and the surface water of some twenty squares of the city in addition, should be carried through this four-foot sewer for the purpose of "flushing" it.

I find that the sewer itself is built of a twelve-inch brick wall and arch, elliptical in form, laid in pure cement, lined with cement, and is twelve feet from the level of the basement floor to the top of the sewer; also that the basement floor above the sewer is made of concrete or broken stone made solid by cement. I also find that the grade or pitch of this main sewer to its outlet is two feet and six-tenths in nine hundred and thirty feet. Under the circumstances of the area involved, the grades provided and the precautions taken for the flushing, with the depth at which the sewer is placed, and the thoroughness of the work, I have no hesitation in saying that such design, in my judgment, will be altogether satisfactory and successful, and will never be the cause of any evil effects from a sanitary point of view, and have no doubt but that if the State Board of Health are assigned quarters in the basement of the building, and are permitted to live until they are injured by any gases therefrom, they will die at a good old age.

The other objections made by the Board of Health in their

communication referring to the design, as, for instance, items which they number respectively 2, 3, 5, 8 and 9, are subjects upon which I, as a professional engineer, and I think I am stating it correctly, any professional, would be as cautious in adopting any arbitrary plan or dimension as the several members of the State Board of Health would be about the diagnosis of some case of unknown disease within their practice.

An extensive experience in the plumbing of large buildings has led me to use five-inch down pipes for all pipes, when two or more closets having four (4) inch inlets are attached. The State Board of Health of New York City and Boston require it, but this Indiana Board condemns it. I am of the opinion that such size is in accord with the larger part of good work all over the country.

The terminating of a soil pipe or vent pipe in a fire-place flue opening into a room is objectionable, as stated, and I find was done in one instance, without the knowledge or sanction of the architect and contrary to the specifications, and has been remedied by the contractors.

But the objection to terminating a vent pipe, or the whole of the vent pipes, from the soil pipe, traps or sewer, in the main smoke stack is absurd; indeed, that is the very thing that the most eminent engineers have aimed to accomplish, and patents for such devices are numerous. The whole system of ventilation for the plumbing and sewage in the Southern Hotel at St. Louis, one of the largest and best in the West, constructed about five years ago, emptied into the main smoke flue, with the certainty that if any gases descend they must do it through a bed of live coals.

The celebrated Bessemer, so well known for his inventions in steel, into whose hands the English Parliament put the improvement of the ventilation of the sewage, etc., of the Houses of Parliament, England, prepared a huge chimney just without the building, to which all the vent pipes were taken, and in the bottom of which was built fires for the express purpose of producing draft to exhaust the vent pipes. I could quote many such instances. In conclusion, I have to say that if the work be finished in accordance with the plans and specifications prepared by your architect, you will have a work with which you, as a board and as citizens, need not cavil, although in the present condition of the art of sanitary engineering I

presume there will be as much difference of opinion as to the best methods as there is to-day in the different State Boards of Health.

In reply to your request to state "what has been my experience and observation in sanitary plumbing for large buildings in the United States," I would say that I have made the plans and specifications for plumbing the Iowa State House, a large number of hospitals for insane and penal institutions, and for large hotels, the "Windsor," "Westminster," "Vendome," and others in New York City and elsewhere. I have been the contractor in some cases and the consulting engineer in others. My observation is, however, that there is a vast amount of twaddle and nonsense on the subject of sanitary engineering, and but very little real practical knowledge acquired or diffused.

I am, very truly,

LEVI R. GREEN,  
Con. Engineer.

The Commissioners believe that the following statements of the City Engineer in regard to the amount of water passing through the sewer from city drainage, in addition to that mentioned in Mr. Green's statement, ought to satisfy even the Board of Health that the flushing of the sewer is amply provided for.

INDIANAPOLIS, April 28, 1886.

*To the Board of State House Commissioners:*

GENTLEMEN—Your inquiry of yesterday received. The area drained into the "State House" sewer at Mississippi and Market streets is twenty (20) square blocks, or 5,202,000 square feet. Amount of rainfall on said area at greatest fall known here equals 832,320 cubic feet. Assuming one-half of which to reach sewer during time of fall (correct in theory and practice) we have 416,160 cubic feet in sewer per hour.

This is on a basis of the greatest rainfalls we have in this latitude, one-half of which, or 208,080 cubic feet per hour in sewer, would be safely assumed as an ordinary rainfall, the effect of which would be to thoroughly flush the sewer, assuming, of course, that the sewer has a proper gradient to insure



this effect. Such flushings may safely be counted on at different times during early spring and fall, as well as occasionally during the summer. Yours, etc.,

S. H. SHEARER,  
City Engineer.

The Commissioners think that the defects mentioned in the first and fifth specifications of the Board of Health need no other comment than that contained in Mr. Green's letter. As to their second specification, the architect and superintendent say that such construction is "in accordance with cardinal requirements in perfect house drainage," although mentioned as a defect by the Board of Health.

The third defect, so-called by the Board of Health, consists wholly in their rather irrational supposition that expansion and contraction will take place in pipes subjected to uniform temperature far above the freezing point.

In their fourth specification the Board don't seem to know for what use the objectionable pipe is intended, but they object to it, "if it is to be employed as a ventilating shaft to the sewer."

The pipe referred to is a down spout from the roof, and is trapped at the sewer, and no sewer gas can enter it.

The sixth, seventh, eighth and ninth specifications of the Board are substantially contained in the expert plumber's report to them, and are fully answered in the comments above on that report.

In the Board's tenth specification they say "they do not approve of the system as they found it, of the plumbing and house drainage made use of in the construction of the building." The Commissioners having no knowledge of the acquirements of the Board of Health in sanitary science, and as current history has wholly failed to provide any information of their achievements in that direction, adopted a system of plumbing and drainage without consulting them, which, however, has been employed by the best known sanitary engineers of the day in the most important structures recently created all over the country.

The Board of Health say that they have been informed by a member of the Board of State House Commissioners "that many of the defects which existed at the time of our inspec-

tion have since been corrected, and that other improvements are contemplated." To this the Commissioners reply that no such information was ever furnished the Board of Health by a Commissioner, and the statement is wholly untrue. The entire work of the plumbing so far has been done in the manner originally provided for in the specifications of the architect, and will be completed under his specifications, unless the Commissioners are furnished with more satisfactory reasons for changing them than the Board of Health have yet offered.

The Commissioners, in conclusion, desire to present a few facts in relation to this controversy over the State House plumbing, for the information of the public, which they think will explain the "true inwardness" of the whole matter.

The contractors for the plumbing employed *non-union* men. They were notified by the Journeymen Plumbers' Union to discharge them and employ *union* men. This they refused to do. Therefore, a species of boycotting was begun upon them. "Squibs" were published in one of the city papers, hinting that bad work was being done in the State House plumbing, inferior materials were being used, etc., when, in fact, samples of the very best material manufactured were deposited in our office at the time, and are still there.

Shortly after Mr. Hudson, the President of the Journeymen Plumbers' Union, with others of the association, acting as a committee, waited upon the Commissioners with his complaints. Not getting what he thought satisfactory consideration, he published articles in the city papers detailing the wretched condition of the State House plumbing. The Commissioners replied, exposing his false statement. This did not satisfy him. It does not usually satisfy any man to be convicted of falsehood. Finding that public opinion gave him little or no credit for his newspaper attacks, he next appeared at the conference of the city, township and county health officers, held in this city, and induced that body to call upon the State Board of Health to come to his aid. The State Board and he formed an alliance. The former ordered an investigation of the plumbing, and appointed an expert plumber and their Secretary to make it, and published the report, in which they acknowledged that their information was derived from their plumbers and Secretary. That report contains the identical specifications of defects, and very little more, that Mr. Hudson

originated. The Board say that they "visited the building several times," making the impression that they examined the plumbing themselves. The Superintendent of the building says that he knows of only two visits by the Board, at one spending about half an hour, and at the second visit not over three quarters of an hour in their examination of the plumbing. Then they publish their report of defects, nearly all of which were the alleged discoveries of Mr. Hudson, long before, and by him supplied to these *impartial* investigators.

The Commissioners believe that the public, knowing these facts, will form correct conclusions as to the value of such a report, even if it be sent out under the sanction of the Board of Health of the State of Indiana.

The Commissioners will report here what they have heretofore published, that when the plumbing is completed a strict examination and test will be made by competent sanitary engineers, and if it is found defective in any particular the defects shall be remedied before it is accepted from the contractor's hands.

By order of the Board of State House Commissioners.

Jno. M. Godown,  
Secretary.

INDIANAPOLIS, IND., May 20, 1886.

INDIANAPOLIS, March 15, 1886.

*To the Members of the State Board of Health :*

GENTLEMEN—In compliance with your request I made an examination of the plumbing of the new State House. Through the kindness of Mr. Pendergast, the Superintendent, I was shown through the building, from the cellar to the attic, and I believe (as Mr. Pendergast said), was shown the work that is exposed to view, a great portion being hid by the iron lath covering and some being plastering in the walls. I am convinced since making the examination that the general system is wrong and not in accordance with the modern ideas of experts.

*First.* There is no fresh air inlet to soil and waste pipes.

*Second.* The safe waste, which is a two-inch cast iron pipe, is made to do double service, that of a waste from safes and also to ventilate the traps of water-closets and urinals. I find on

one line of soil pipe, at the northwest corner of the dome, twenty (20) water-closets and twelve (12) urinals, all vented by this two-inch pipe, and the same pipe is to be used for the safe waste on that line of pipe.

*Third.* On the first floor in the closet-room, west of the south entrance, there are four (4) water-closets vented into a brick flue, the soil pipe extending up only about three (3) feet above the floor to where it enters the flue. This flue is not plastered but has been washed over with a thin coat of hydraulic cement put on with a brush.

*Fourth.* At the extreme north end of the building I find that the safe waste vent pipe is connected with the soil pipe and then the soil pipe enters the large smoke stack.

*Fifth.* I find that the four-inch waste pipe from several urinals runs up and is vented into a brick flue. The same flue has one or more fire-grate openings.

*Sixth.* Three water-closets are vented into another brick flue with grate openings.

*Seventh.* The waste pipes, down spouts, and overflow pipes from the tanks connect in the cellar with the ordinary stone sewer pipe and then run to the sewer. These pipes are not connected, and lay exposed on the top of the ground. .

*Eighth.* In the closet room near the southwest corner I found one joint of the safe waste and vent pipe loose, not having been properly calked.

*Ninth.* Traps are placed in the cellars at the bottom of each stack of soil and waste pipe, and as there is no fresh air inlet the pipes become air bound and the free passage of the water is checked.

*Tenth.* I find that some of the flues which the soil and waste pipes enter for ventilation do not run out through the roof, but are to be left open even with the floor in the attic, where a number of the ventilating flues for the different rooms are open in the same manner. I find also a number of joints on the soil and waste pipes that were not more than one-half full of lead, putty being used to fill them.

Respectfully,

JOHN C. DUNN,  
Practical Plumber.

The State House Commissioners, in their reply intimate that the Board of Health is a meddlesome body, which, in making the investigation in question, transcended their authority. They are certainly unacquainted with the law governing in the case. The act establishing a State Board of Health provides, among other things, that "they shall, when required, or when they deem it necessary, advise officers of the government or other State boards in regard to the location, drainage, water supply, disposal of excreta, heating and ventilation of any public institution."

The charge that the Board of Health formed an alliance with Mr. Hudson, president of the Journeymen Plumbers' Association, is absolutely untrue. Not a member of the State Board of Health knew Mr. Hudson at the time the investigation was begun; besides, Mr. Hudson was not at the convention of local health officers, and no member of the convention had ever seen the gentlemen up to that time. The subject of the State House plumbing was brought about in the following manner: A few days before the sanitary convention was held the Secretary of the Board of Health received from Dr. J. F. Hibberd, of Richmond, a letter stating that he had read a communication in the Sanitary Engineer condemning the plumbing in the Indiana State House. He inclosed a copy of a resolution which he purposed to introduce at the convention. The Secretary concurred in the suggestion as to the propriety of inquiring into the matter, and sent to the State House Commissioners a copy of Dr. Hibberd's resolution, and informed them that the subject would be brought before the convention, and desired them to send a representative, which they did in the person of Hon. W. B. Steward. The resolution was introduced, read, and its contents thoroughly discussed by those present, after which it was unanimously adopted. The Board of Health instituted an investigation, which resulted in the discovery of numerous sanitary defects in the plumbing and house drainage of the building, which were pointed out to the Commissioners in the preceding communication. It was this letter which caused the Commissioners to charge that the Board of Health had formed certain alliances. The only interest the Board of Health has in the State House plumbing in that which is shared by all citizens of the State.

As officers under the law they intend to do their duty. The contents of the reply of the Board to the communication of the Commissioners will be found in an article read before the National Conference of State Boards of Health, entitled "The Plumbing in the New Indiana State House," and published in the transactions of that body, and will be found in this report.

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### REFORM SCHOOL FOR BOYS.

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This institution is situated twenty miles from the capital of the State, in Hendricks County.

Its erection was commenced in 1867, with constant additions since.

There are now thirty-four buildings upon the grounds. The main one, which is the home of the Superintendent and family, also contains the offices connected with the institution. This is a commodious three-story brick structure, and strikes one as very homelike in its appointments. The boys feel free to come to the office at certain times, and are assured of a kind welcome from the Superintendent. At certain distances from this house are the chapel, dining-room and kitchen, bakery, workshops, etc.; also, the cottages for the boys. These are each two-story brick houses, and in charge of reliable men called *house fathers*. Each is expected to take full charge of a certain number consigned to him, teaching and looking after their general welfare. He has his own apartments in this building, a good-sized and well-appointed school room and over this a dormitory for this particular number. He marches in front of his column of boys to and from chapel and meals, etc. This cottage arrangement is followed, I believe, by only a few other schools in the country, and is looked upon as the great feature in the work of reformation, inspiring the boys with the home feeling, as they take great pride in keeping everything clean as their time comes to be entrusted with the care of the building. Each cottage has a furnace, which is looked after by the boys in turn. Comparatively few have escaped or make effort to do so. There are at present five hundred and sixteen boys in the

school, the oldest twenty and the youngest nine. This is the largest number which they have ever had. Seven months in the year they are afforded school privileges five hours each day. Outside of school hours they are employed learning trades or at work upon the farm. They make thousands of brick every year. In the year past there have been no deaths. One boy is dying from consumption, and was *returned* here from St. Mary's Hospital, Cincinnati, Ohio.

The ground upon which this institution stands is *beautiful for situation*, in a fine rolling country, and many springs are found in the grounds and one lake. Professor Charleton is a courteous gentleman, whose heart is thoroughly in sympathy with the work, and he has always aimed to surround himself with trusted co-workers.

INDIANA STATE BOARD OF HEALTH,  
OFFICE OF THE SECRETARY,  
Nos. 20 AND 21 MASONIC TEMPLE,  
INDIANAPOLIS, Oct. 8, 1886. }

*Hon. Isaac P. Gray, Governor of Indiana :*

We take pleasure in making the following report in relation to the different benevolent reformatory institutions of our State, at Indianapolis.

#### HOSPITAL FOR THE INSANE.

On Thursday, the 6th inst., we visited the Hospital for the Insane and made a very careful and complete inspection of that vast institution. We inquired into the management and government, and made personal observations which convince us that everything is done that can be done for the amelioration of the condition of the unfortunate inmates. The appearance of the patients shows clearly that they are well cared for. The officers are kind and attentive to every want of the 1,600 who are in the two buildings. They seemed glad to show us in detail the entire system of management, especially the care of the patients, the quality and quantity of the food given them. We examined the bread, beef, pork, butter, eggs, vegetables and groceries, and found them of the very best quality.

We saw the patients at dinner and supper, inspected their food, and found it excellent and abundant. They are fed in general dining-rooms, with side rooms for "specials," for sick and infirm.

The sanitary condition, considering the class of inmates, is all that it can be made. Every nook and corner, from cellar to garret, is scrupulously clean, and not a bad smell can be detected anywhere in the building. The patients are clean and well clothed, and with few exceptions seemed contented and happy. There are none under mechanical or medicinal restraint, and in the afternoon all that were able to get out of bed were taken out on the grounds for the usual promenade.

The wards are very clean, and the beds and bedding are as good and clean as are found at the best hotels or in private families.

In the wards containing the most patients are found a man and his wife in charge, which seemed to us to have a good effect, taking away the prison appearance and substituting home life. A woman's voice has a good effect among wild and boisterous men.

A very pleasing feature to us is the fact that the use of liquors of any kind is not permitted in the institution.

The sick are isolated in separate wards, with constant attendants.

By recent improvements in the water system and supply we find that it is abundant for all purposes, and seems of excellent quality, being drawn from driven wells.

Different kinds of amusements are provided to employ the patients' minds, which enables them to forget, to some extent, the many delusions under which they live. Dancing, schools, theatrical performances, music, reading, and the like are indulged in, the theory of the management being that when the mind is thus employed the government is comparatively easy. We conclude, therefore, after a thorough examination, that this institution is in first-class condition.



## INDIANA REFORMATORY INSTITUTION FOR WOMEN AND GIRLS.

We found this institution also in excellent condition. The beds of the inmates are clean and free from dirt and vermin, and are kept in such manner as to be comfortable. The inmates are engaged in different kinds of work, such as sewing, cooking, washing and scrubbing. The children are in school a half day, and the rest of the time are kept at work. All the surroundings, back yards and stables are in good sanitary condition. The whole management is in charge of women, proving that they are capable of doing such work efficiently. Both rain and well water are used, the supply being abundant and pure. The sewerage, so far as could be seen, is perfect. The store-rooms were carefully inspected and found to be clean and neat in every particular. The food is sufficient and of the best quality, and so cooked as to be wholesome. The institution has more the appearance of a home for unfortunates than that of a prison. It is certainly an honor to the State and a credit to those in charge. There are at present fifty-four prisoners, eleven of whom are life prisoners, and 137 in the reformatory department.

## ASYLUM FOR BLIND.

This institution we likewise carefully inspected. The rooms are clean, well ventilated and in most cases well lighted. The beds are clean and well provided with suitable covering. We were especially pleased with the system of plumbing which has been perfected by the present management. There are only a few mild cases of sickness among the inmates; all the rest are either in school, caning chairs, making brooms or engaged in some other useful manner. It is to be regretted that the building is not considerably larger, as the Superintendent is almost daily in receipt of applications from those, who have become blind after mature life, for admission to enable them to acquire the means of making a livelihood and relieve them from the necessity of relying upon public charity for support. The Legislature should see to it that the proper addition to the building is made. The cellar is clean and free from offensive odors. The yards and grounds are beautifully kept and well drained. The kitchen, bakery and store-rooms are all in excellent condition.

## INSTITUTE FOR DEAF AND DUMB.

This building is also too small to accommodate all who seek admission for instruction, and too many beds must be crowded into the rooms to provide for those who are now there. A few mild cases of sickness were found, and the rest were engaged in the various employments common to such institutions. The sanitary condition of the building is good, beds clean, the food, both in quality and quantity, being good. Additions should also be made to the building without unnecessary delay.

C. N. METCALF, M. D.,	S. R. SEAWRIGHT, M. D.,
Secretary.	President.

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OPINION OF THE ATTORNEY-GENERAL CONCERN-  
ING REPORTS OF LOCAL PHYSICIANS.

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*Dr. C. N. Metcalf, Secretary State Board of Health:*

SIR—You submit to me the following question: “Can physicians be required to report to the Secretary of the Board of Health of the town, city or county, all births and deaths which may occur under their supervision?”

The statute renders it the duty of physicians to report to the Secretary of the Board of Health of the town, city or county in which they may occur, and within fifteen days thereafter, all births and deaths which may happen under their supervision, with a certificate of the cause of death, and such correlative facts as may be required in the blank forms furnished, as provided by law, and any physician willfully or purposely failing or refusing to comply with the provisions thereof is deemed guilty of a misdemeanor, and upon conviction thereof is subject to a fine of not less than \$5 nor more than \$10. (R. S. 1881, Sec. 4995.)

The duties imposed by this statute, and the penalty for its violation, are within the police power of the State, and the statute is valid and constitutional. (Robinson vs. Hamilton, 60 Iowa, 134; 46 Amer. R., 63.)

In the case of Robinson vs. Hamilton, *supra*, which was an action for a penalty against a physician for his failure to render a report of a death or birth, as requested by the State Board of Health, the Court says: "It is proper to remark that under the statute brought in question, the defendant may be required to report the information sought in the manner prescribed by the Board of Health. The statute requires the collection of statistics pertaining to the population of the State and the health of the people which may impart information useful in the enactment of laws and valuable to science and the medical profession, to whom the people look for remedies for disease and for means tending to preserve health. The objects of the statute are within the authority of the State, and may be attained in the exercise of its police powers. Similar objects are contemplated by statutes requiring a census to be periodically taken, the constitutionality of which we have never heard questioned.

"We need not inquire whether the provisions of the statute are unjust or oppressive. These are matters for the consideration of the Legislative Department of the Government. We may observe that it is difficult to discover oppression or injustice in requiring the medical profession to make known to the world statistics which may promote, and are promoting, the public health.

"One ground of the demurrer is that defendant, under the statute, is required to do that which is impossible for him to perform. The law requires of no man impossibilities. If the information sought from defendant could not have been obtained by him in the bona fide exercise of reasonable diligence, the law will not punish him for not imparting it. A physician should honestly endeavor to obtain and report all information required by the regulations of the statute and the Board of Health. This is his duty as a surgeon, and is imposed as an obligation by the ethics of the useful and honorable profession of which he is a member."

The statute confers on a physician certain privileges, and may impose corresponding duties. Respectfully,

FRANCIS T. HORD,  
*Attorney-General.*



**FIFTH ANNUAL REPORT**

**OF THE**

**BUREAU OF VITAL AND SANITARY STATISTICS,**

**FOR THE YEAR ENDING**

**SEPTEMBER 30, 1886.**

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By C. N. METCALF, M. D., Secretary of the Board.

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Under the law, as it now is, there are several obstacles in the way of collecting statistics, which must be removed before the desired result can be accomplished.

The reports of births are not so difficult to procure as are reports of deaths. Some physicians, from the fact that they are so loath to report deaths, seem to feel as though possibly they have in some manner been instrumental in bringing it about. They feel, and in some instances have so stated, that a report of a death is regarded as evidence against the skill of the physician making it, forgetting that "it is appointed unto man once to die."

Others excuse themselves because they are not paid for the labor required to make the report. The Attorney General, in an opinion published elsewhere in this volume, says:

"A physician should honestly endeavor to obtain and report all information required by the regulations of the statutes and the Board of Health. This is his duty as a surgeon, and is im-

posed as an obligation by the ethics of the useful and honorable profession of which he is a member. The statute confers on a physician certain privileges, and may impose corresponding duties."

The Secretary of the Board has conferred with many county health officers, and various methods looking to an improvement in the law, as now constituted, have been discussed. That method which is least inconvenient to the physician and the people will be most popular, and hence, more readily enforced. A majority of those who have expressed opinions upon this subject seem to agree that in all cases of death burial permits should be required based upon a report of death. The number of deaths reported to us indicate a very light mortality, and while this is true, comparatively (as, upon the whole, the health of our people was never better), it is much too small. In New Hampshire, prior to the enactment of a law requiring burial permits, the deaths reported showed a death rate of *eight to the thousand*, while, after the law went into effect, the rate was increased to *eighteen to the thousand*.

Insurance companies, who have selected risks requiring a medical examination of applicants, report a death rate of *eight to ten to the thousand*. So that it is safe to conclude that our death rate, taken as a whole, is in fact about *eighteen to the thousand*. Of course, in cities the mortality is somewhat in excess of what it is in the country.

I wish to urge the importance of keeping the death record, and, in fact, other records, accurately. There are frequent calls at county health offices by pension examiners as to causes of death in certain cases. So also in regard to the settlement of estates, proving that as time progresses these records become more and more valuable.

Whose duty it should be made to issue this burial permit, without causing unnecessary inconvenience, is rather a perplexing question, but the weight of opinion seems to be that the Township Trustee is the proper officer in whom this authority should be vested. In cities the Secretary of the Board of Health or the City Clerk might be required to perform this work.

Certain it is that under the present law, and the unwillingness on the part of physicians, and even health officers, to assist in its enforcement, our statistics will be far from complete, and in the matter of reliable information upon these subjects we can

not keep pace with other States which take a deeper interest in such matters.

In the matter of births, the number reported is more nearly correct, because physicians make such reports much more readily. They seem to take more pleasure in officiating at the beginning than at the end of one's career. The birth record of the county health officer is, however, deficient in one important matter, viz.: that of the christian name of the child. In a majority of cases the infant is not named at birth, because a name selected in advance might not be appropriate, and the physician is compelled to leave it blank, and no effort is made afterward to supply the omission.

We again urge the necessity of proper amendments to the law, which will measurably remedy the present defects.

TABLE A.

*Showing Total Number of Deaths by Months, Sex and Color Year Ending September 30, 1886.*

CLASS ONE—ZYMOTIC DISEASES.	Total											
	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.
ORDER ONE.	Male.											
	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.
Anthrax	40	6	1	2	1	1	6	1	34	146	1	2
Cholera infantum	1	2	1	1	4	1	1	4	3	10	15	122
Cholera morbus	83	30	32	27	19	16	19	6	4	7	5	4
Congestive chill	1	1	1	1	3	4	5	4	4	9	8	6
Croup	12	6	6	8	3	4	5	4	7	13	25	11
Diarrhea	59	65	40	34	27	25	12	16	8	15	37	51
Diphtheria	31	7	8	3	1	1	3	4	8	28	26	40
Dysentery	5	5	1	6	4	1	5	2	4	14	18	27
Enterocolitis	2	3	1	1	1	1	5	5	4	4	6	2
Erysipelas	2	1	2	2	1	1	7	4	1	6	1	2
Fever, bilious	8	12	13	8	15	18	31	19	12	6	2	12
Fever, catarrhal	5	2	2	2	1	1	1	3	1	3	2	9
Fever, cerebro-spinal	5	2	1	1	4	1	1	3	1	3	2	5
Fever, congestive	2	1	1	1	1	1	1	1	1	1	1	1
Fever, continued	17	15	11	16	11	4	1	6	10	4	3	3
Fever, intermittent	3	3	4	1	7	9	14	1	2	5	13	12
Fever, malarial	14	6	11	6	4	4	9	1	1	4	13	5
Fever, pernicious	6	3	4	1	2	2	1	4	4	5	3	8
Fever, puerperal	2	2	2	1	2	1	1	4	2	2	2	2
Fever, remittent	29	22	6	18	18	27	27	24	37	25	18	18
Fever, scarlet	97	73	39	46	25	24	29	21	25	48	74	98
Fever, traumatic	32	14	9	13	5	7	9	2	6	8	1	18
Fever, typhoid	2	1	3	3	2	3	5	2	1	2	1	1
Fever, typho mal.	1	1	1	1	1	1	1	1	1	1	1	1
Flux	2	1	1	1	1	1	1	1	1	1	1	1
Gangrene	1	1	1	1	1	1	1	1	1	1	1	1
Measles	1	1	1	1	1	1	1	1	1	1	1	1
Total	634	523	523	523	523	523	523	523	523	523	523	523
Colored.	11	9	9	9	9	9	9	9	9	9	9	9
White.	623	514	514	514	514	514	514	514	514	514	514	514
Female.	2	2	2	2	2	2	2	2	2	2	2	2
Male.	266	266	266	266	266	266	266	266	266	266	266	266
September.	122	122	122	122	122	122	122	122	122	122	122	122
August.	170	170	170	170	170	170	170	170	170	170	170	170
July.	146	146	146	146	146	146	146	146	146	146	146	146
June.	34	34	34	34	34	34	34	34	34	34	34	34
May.	1	1	1	1	1	1	1	1	1	1	1	1
April.	6	6	6	6	6	6	6	6	6	6	6	6
March.	1	1	1	1	1	1	1	1	1	1	1	1
February.	3	3	3	3	3	3	3	3	3	3	3	3
January.	2	2	2	2	2	2	2	2	2	2	2	2
December.	1	1	1	1	1	1	1	1	1	1	1	1
November.	6	6	6	6	6	6	6	6	6	6	6	6
October.	40	40	40	40	40	40	40	40	40	40	40	40



[illegible]

TABLE A—Continued.

CLASS TWO—CONSTITUTIONAL DISEASES.																	
	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	Male.	Female.	White.	Colored.	Total.
ORDER ONE—DIATHETIC.																	
Anemia . . . . .	1	2	1	1	1	3	2	1	4	6	3	2	12	15	27	1	26
Anasarca . . . . .	2	1	1	1	1	1	1	1	1	1	1	1	6	3	10	1	11
Ascites . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8
Cancer . . . . .	7	13	3	8	10	8	19	7	16	6	19	18	70	64	131	3	134
Cancer, bladder . . . . .	3	2	1	1	3	1	3	2	1	1	1	2	7	21	1	1	21
Cancer, breast . . . . .	1	1	1	1	1	1	1	2	2	1	1	1	1	7	20	1	21
Cancer, liver . . . . .	3	3	2	2	3	1	5	2	2	3	7	3	39	21	59	13	60
Cancer, stomach . . . . .	3	2	4	7	3	4	1	3	4	4	2	1	37	37	83	4	37
Cancer, uterus . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	3
Chlorosis . . . . .	18	7	10	8	16	16	14	19	14	12	20	11	80	85	150	15	165
Dropsy . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	4	4	6	6	16
Goitre . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	3	7	7	7
Leucocythemia . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	4	4	6	6	6
Lymphadenoma . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	7	7
Rheumatism . . . . .	6	7	3	10	14	6	9	13	9	5	9	1	43	44	88	4	92
Total . . . . .	52	39	27	43	54	42	56	56	54	53	66	49	275	316	559	32	591
ORDER TWO—TUBERCULAR.																	
Abcess psoas . . . . .	3	4	1	1	5	7	4	3	3	3	8	5	2	3	5	3	5
Hydrocephalus . . . . .	4	1	1	2	1	1	1	1	1	1	1	1	30	19	46	1	49
Melanosis . . . . .	10	6	13	4	10	10	4	7	4	7	6	7	42	22	2	2	2
Meningitis, tubercular . . . . .	1	2	2	3	4	4	4	1	1	1	1	1	42	48	85	3	88
Morbus coxarius . . . . .	157	94	127	204	204	217	205	159	161	172	136	127	835	1,023	1,797	166	1,983
Phthisis pulmonalis . . . . .	1	1	1	1	1	1	1	2	1	1	1	1	2	4	4	4	6
Pott's disease . . . . .	1	2	2	5	6	8	3	6	3	3	3	3	17	28	33	12	45
Rachitis . . . . .	1	2	2	5	6	8	3	6	3	3	3	6	15	23	33	5	48
Scrofula . . . . .	4	2	1	2	1	1	1	3	3	6	6	6	1	2	6	4	6
Tuberc. mesenterica . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
White swelling . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total . . . . .	179	109	147	221	228	248	218	180	174	192	161	150	950	1,257	2,018	189	2,207
Total Constitutional Diseases . . . . .	231	148	174	264	282	290	274	236	228	245	227	199	1,225	1,573	2,577	221	2,798

TABLE A—Continued.

CLASS THREE—LOCAL DISEASES.																
ORDER ONE—NERVOUS SYSTEM.																
October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	Male.	Female.	White.	Colored.	Total.
24	21	23	21	23	22	23	13	14	12	8	12	127	89	212	4	216
14	14	11	17	15	14	17	3	24	25	23	18	115	5	11	1	12
6	3	1	3	3	8	17	9	24	25	1	1	39	37	68	8	76
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	4
1	1	1	1	1	4	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1	1	1	1	1	1	2	5	2	7	2	3	14	21	34	1	38
1</																

TABLE A—Continued.

CLASS THREE—LOCAL DISEASES.																	
ORDER TWO—CIRCULATORY.																	
October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	Male.	Female.	White.	Colored.	Total.	
Aneurism . . . . .																	
Angina, pectoris . . . . .	1	3	2	1	5	3	1	3	1	3	3	17	13	30		2	
Congestion . . . . .	1	1	1	1	6	2		2	3	7		17	10	27		30	
Endo, carditis . . . . .												5	3	8		8	
Heart, clot . . . . .												6	2	4		4	
Heart, dilatation . . . . .												9	4	13		13	
Heart, disease . . . . .	30	24	35	26	34	38	29	32	40	80	25	161	211	354	18	572	
Heart, fatty . . . . .												13	6	20		21	
Heart, hypertrophy . . . . .												7	8	13		13	
Heart, paralysis . . . . .												3	21	22		21	
Heart, val., disease of . . . . .												53	42	91		43	
Hydropericardium . . . . .												8	5	13		13	
Pericarditis . . . . .	2	1	2	2	3	6	3	1	3	2	1	18	10	27		28	
Phlebitis . . . . .												1	1	2		2	
Syncope . . . . .												1		1		1	
Thrombus . . . . .												1		1		1	
Total . . . . .	43	55	50	69	47	72	52	55	60	57	41	337	337	648	28	674	
ORDER THREE—RESPIRATORY.																	
Apnea . . . . .																	
Asthma . . . . .	5	3	1	4	1	3	3			1		18	22	38		2	
Bronchitis . . . . .	20	11	13	23	35	29	13	10	6	10	8	107	104	201	10	40	
Croup . . . . .												1	6	6		6	
Emphysema . . . . .												4	2	4		4	
Hemoptysis . . . . .												23	25	42		48	
Hydrothorax . . . . .												1	4	8		8	
Influenza . . . . .												4	1	4		4	
Laryngitis . . . . .												1	1	2		2	
Lungs, Abscess . . . . .												22	21	43		43	
Lungs, congestion . . . . .												13	11	22		24	
Lungs, disease . . . . .												70	57	124		127	
Lungs, edema . . . . .												2	2	5		5	
Edema of glottis . . . . .	1	1	1	2	1							2		1		2	

Pleurisy . . . . .	3	43	1	2	146	226	174	2	38	31	25	2	2	11	5	15	1	16
Pneumonitis . . . . .	45	119	64	119	146	226	174	2	38	31	25	2	2	11	5	15	1	994
Pneumonitis, catarrhal . . . . .	1	8	1	8	4	2	2	1	1	1	1	1	1	1	3	4	1	14
Pneumonitis, pleuro . . . . .	4	6	6	11	11	11	14	2	3	1	1	1	1	89	22	60	1	61
Pneumonitis, typho. . . . .																		
Total . . . . .	95	72	114	186	218	326	252	98	66	72	63	51	854	761	1,551	64	1,615	
ORDER FOUR—DIGESTIVE.																		
Bowels, catarrh . . . . .	4	3	1	4	3	1	3	2	8	8	9	3	9	20	9	44	2	9
Bowels, congestion . . . . .	17	1	2	3	3	3	1	1	3	1	1	2	28	10	12	12	1	46
Bowels, hemorrhage . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	19	19	12	1	13	
Bowels, obstruction . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	7	6	2	1	8	
Bowels, ulceration . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	6	2	2	1	8	
Colic . . . . .	2	1	1	1	1	1	1	1	1	1	1	1	6	2	2	1	8	
Colitis . . . . .	2	1	1	1	1	1	1	1	1	1	1	1	6	2	2	1	8	
Dyspepsia . . . . .	15	7	8	12	8	4	14	10	21	22	41	30	114	80	10	19	19	19
Enteritis . . . . .	10	13	6	6	7	9	16	12	9	17	8	11	54	70	123	186	164	
Gall stones . . . . .	6	2	2	5	3	3	4	4	2	7	6	10	80	24	132	4	124	
Gastritis . . . . .	3	3	3	5	1	5	1	7	3	7	6	4	31	26	63	2	57	
Gastro-enteritis . . . . .	1	2	1	1	1	1	1	1	1	4	1	1	9	8	17	4	17	
Hemorrhoids . . . . .	7	3	2	3	3	1	1	2	1	3	1	1	14	4	17	1	22	
Hepatitis . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Hernia . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Indigestion . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Intussusception . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Jaundice . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Liver abscess . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Liver atrophy . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Liver, cirrhosis . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Liver, congestion . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Liver, disease . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Liver, hypertrophy . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Liver, sclerosis . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Gonophagus, stricture . . . . .	3	3	1	3	1	1	2	2	1	4	1	1	14	4	17	1	22	
Peritonitis . . . . .	15	13	6	15	11	17	17	14	11	8	11	11	65	84	143	6	149	
Scurvy . . . . .	9	1	3	1	3	1	7	2	2	3	2	1	15	23	41	2	3	
Stomach, catarrh . . . . .	9	1	3	1	3	1	7	2	2	3	2	1	15	23	41	2	3	
Stomach, congestion . . . . .	9	1	3	1	3	1	7	2	2	3	2	1	15	23	41	2	3	
Stomach, hemorrhage . . . . .	9	1	3	1	3	1	7	2	2	3	2	1	15	23	41	2	3	
Stomach, ulceration . . . . .	9	1	3	1	3	1	7	2	2	3	2	1	15	23	41	2	3	
Stomatitis . . . . .	2	2	1	2	2	2	2	2	2	2	4	2	16	18	27	1	28	
Tonsillitis . . . . .	2	2	1	2	2	2	2	2	2	2	4	2	16	18	27	1	28	
Typhlitis . . . . .	2	2	1	2	2	2	2	2	2	2	4	2	16	18	27	1	28	
Total . . . . .	103	60	43	86	64	79	102	77	84	100	106	92	529	467	958	38	996	

TABLE A—Continued.

CLASS THREE—LOCAL DISEASES.													Total.				
	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.		Male.	Female.	White.	Colored.
ORDER FIVE—URINARY.																	
Albuminures . . . . .	1	2	2	3	2	1	4	1	2	...	2	3	13	10	21	2	23
Bladder, hemorrhage of . . . . .	...	...	1	6	...	...	...	...	1	...	...	...	32	13	45	...	45
Cystitis . . . . .	4	4	3	5	4	7	3	2	4	3	2	...	27	20	46	1	47
Diabetes . . . . .	6	4	3	5	3	3	6	2	3	3	4	3	27	1	46	...	47
Ischuria renalis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Kidney disease . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16
Nephritis . . . . .	12	7	7	11	10	11	12	11	16	6	13	8	78	8	120	4	124
Nephritis . . . . .	5	3	6	5	2	4	6	5	5	5	8	8	44	18	61	1	62
Prostatitis . . . . .	...	1	2	3	1	1	6	6	6	11	6	8	33	38	67	4	71
Uremia . . . . .	3	1	5	...	...	7	10	6	6	...	...	...	...	1	...	...	1
Urine, suppression of . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total . . . . .	33	25	35	36	29	35	42	27	37	28	37	35	243	156	387	12	399
ORDER SIX—GENITIVUM.																	
Metritis . . . . .	...	...	1	2	...	1	3	1	1	1	1	3	...	11	11	...	11
Ovarian tumor . . . . .	1	...	2	1	...	1	3	2	1	1	1	...	...	13	13	...	13
Total . . . . .	1	...	3	3	...	2	3	3	2	2	2	3	...	24	24	...	24
ORDER EIGHT—INTEGUMENTARY.																	
Abscess . . . . .	5	...	1	7	4	8	2	6	5	8	2	7	32	23	53	2	55
Cellulitis . . . . .	...	...	1	...	3	...	...	...	...	...	...	...	1	3	4	...	4
Total . . . . .	5	...	2	7	7	8	2	6	5	8	2	7	33	26	57	2	59
ORDER NINE—MISCELLANEOUS.																	
Tumor . . . . .	1	...	1	3	2	2	1	...	1	2	3	1	8	9	17	...	17
Total . . . . .	1	...	1	3	2	2	1	...	1	2	3	1	8	9	17	...	17
Total local diseases . . . . .	440	329	356	568	514	712	668	387	409	443	416	354	2,975	2,621	5,380	216	5,606

TABLE A—Continued.

CLASS FOUR— DEVELOPMENTAL DISEASES.													Total.				
	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	Male.	Female.	White.	Colored.	Total.
ORDER ONE — CHILDREN.																	
Atelectasis . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	7	4	8	1	8
Birth, injuries . . . . .	17	9	8	22	6	13	24	23	20	2	17	16	112	83	185	10	10
Birth, premature . . . . .	5	5	3	5	5	2	1	3	6	14	4	4	30	28	57	1	195
Cyanosis . . . . .	1	1	1	1	1	2	1	1	1	1	2	1	4	4	11	1	12
Dentition . . . . .	1	1	1	1	1	2	1	1	1	1	1	2	4	3	11	1	5
Hemorrhage, umbilical . . . . .	1	1	1	3	1	1	1	3	1	1	4	2	4	8	11	1	11
Malformation . . . . .	1	1	1	1	1	1	1	1	1	1	1	2	4	4	11	1	12
Malnutrition . . . . .	1	1	1	1	1	1	1	1	1	1	1	2	4	4	11	1	12
Total . . . . .	28	17	14	33	15	21	31	32	28	40	28	26	179	132	297	14	311
ORDER TWO — WOMEN.																	
Amenorrhea . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Climacteria . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ovariotomy . . . . .	2	5	3	2	4	3	3	2	3	1	1	1	1	1	2	2	3
Parturition . . . . .	1	3	2	2	1	1	1	1	1	1	1	1	1	1	29	3	1
Placenta previa . . . . .	1	3	2	2	1	1	1	1	1	1	1	1	1	1	2	2	1
Phlegmatia dolens . . . . .	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2	2	2
Postpartum hemorrhage . . . . .	5	1	1	2	2	2	3	3	3	3	1	3	3	12	28	2	12
Puerperal eclampsia . . . . .	1	1	1	1	1	1	2	1	2	1	2	1	1	11	30	2	12
Puerperal hemorrhage . . . . .	1	1	1	1	1	2	1	1	2	1	1	3	3	11	11	2	11
Uterine, tumor . . . . .	1	1	1	1	1	1	1	1	2	1	1	1	1	2	3	3	3
Uterine, disease . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Uterus, rupture . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Uterus, ulceration . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total . . . . .	8	10	8	7	10	9	9	5	9	7	5	16	103	103	98	5	103

TABLE A—Continued.

CLASS FOUR— DEVELOPMENTAL DISEASES.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	Male.	Female.	White.	Colored.	Total.
ORDER THREE—OLD AGE.																	
Old age . . . . .	22	22	31	24	27	32	39	19	20	18	24	32	144	166	299	11	310
ORDER FOUR—NUTRITION.																	
Asthenia . . . . .	5	2	1	1	2	5	21	17	10	13	18	11	6	10	16	4	16
Debility . . . . .	17	12	13	18	12	18	6	5	2	3	4	7	93	87	176	4	180
Exhaustion . . . . .	7	4	9	3	6	4	7	5	2	3	8	15	29	31	60	3	60
Marasmus . . . . .	9	3	5	3	1	4	3	5	3	8	8	15	36	28	61	3	64
Total . . . . .	35	21	28	25	21	31	30	27	15	24	30	33	164	156	313	7	320
Total Developmental Diseases . . . . .	91	70	81	89	73	93	109	83	72	89	87	107	487	557	1,007	37	1,044



TABLE A—Continued.

CLASS FIVE—VIOLENCE.																		
October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	Male.	Female.	White.	Colored.	Total.		
ORDER ONE—ACCIDENTS AND NEGLIGENCE.																		
Accident . . . . .	34	20	18	33	25	28	29	18	30	30	33	28	248	78	313	13	326	
Accident, railroad . . . . .	3	9	8	4	3	7	11	8	8	18	5	8	89	3	92	7	92	
Boiler explosion . . . . .	4	2	6	5	3	8	6	3	3	3	2	2	16	1	43	7	43	
Burn . . . . .	3	3	2	5	3	2	4	3	3	3	2	2	19	27	43	1	55	
Coal mine . . . . .	1	1	2	3	2	2	4	17	8	14	9	1	62	8	55	5	60	
Drowning . . . . .	1	1	1	2	1	1	1	2	2	3	6	2	13	2	14	1	15	
Lightning . . . . .	1	1	1	2	1	2	2	2	2	4	6	2	12	4	16	1	16	
Poisons . . . . .	1	1	1	2	1	2	2	3	1	2	4	5	24	2	24	2	26	
Shooting . . . . .	1	1	1	6	2	1	3	3	1	7	1	5	34	2	34	3	37	
Suicide . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	2	3	3	3	3	
Sunstroke . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3	3	
Total . . . . .	45	35	34	56	33	47	53	53	49	81	63	44	468	125	572	21	593	
ORDER TWO—HANGING.																		
Judicial . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	4	4	3	1	4	
By a mob . . . . .	1	1	1	1	3	3	1	1	1	1	1	1	4	3	3	1	4	
Total . . . . .	2	2	2	2	4	4	2	2	2	2	2	2	8	7	6	2	8	
ORDER THREE—HOMICIDE.																		
Homicide . . . . .	4	2	4	3	3	2	1	3	3	3	2	1	18	4	20	2	22	
Shooting . . . . .	1	1	1	1	1	2	2	3	3	4	6	2	6	8	8	2	8	
Total . . . . .	4	2	4	3	3	2	2	3	3	3	2	1	24	6	28	2	30	

TABLE A—Continued.

CLASS FIVE—VIOLENCE.																
October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	Male.	Female.	White.	Colored.	Total.
ORDER FOUR—SUICIDE.																
7	4	1	8	4	3	3	3	2	3	6	3	27	19	45	1	46
1	2	1	3	2	1	1	1	1	2	4	1	12	5	5	5	17
1	1	1	1	1	1	1	1	1	4	2	1	8	4	17	12	12
1	1	2	1	1	1	2	1	1	1	2	1	14	1	15	15	15
10	7	4	13	9	8	8	5	4	9	13	5	62	33	94	1	96
59	44	42	73	43	60	65	62	56	93	79	50	562	164	700	26	726
50	38	35	22	13	19	34	16	27	26	37	33	169	180	325	24	349
RECAPITULATION.																
428	297	207	223	203	216	243	197	231	443	511	534	1,899	1,944	3,554	179	3,733
231	148	174	264	282	290	274	236	228	245	227	199	1,225	1,573	2,577	221	2,798
440	329	356	568	514	712	668	397	409	443	416	354	2,976	2,621	5,390	216	5,596
91	70	81	89	73	93	109	83	72	89	87	107	487	557	1,007	87	1,094
59	44	42	73	43	60	65	62	56	93	79	50	562	164	1,007	26	726
50	38	35	22	13	19	34	16	27	26	37	33	169	180	325	24	349
1,299	926	895	1,239	1,128	1,399	1,393	981	1,023	1,339	1,357	1,277	7,307	6,939	13,543	703	14,246
												39	34	73	..	73
												7,346	6,973	13,616	703	14,319
Total																

\*Still births not included.

TABLE B.  
*Showing Causes of Death, Nationality and Social Relations.*

CLASS ONE—ZYMOTIC DISEASES.	TOTAL.		NATIONALITY.						SOCIAL RELATIONS.								
	Males.	Females.	American.			Foreign.			Not Rep't'd		Single.	Married.		Widow.	Not Rep't'd		Total.
			M.	F.	Total.	M.	F.	Total.	M.	F.		Total.	M.		F.		
ORDER ONE.																	
Anthrax . . . . .	4	2	4	2	6	2	2	4	1	2	2	1	2	1	2	6	534
Cholera infantum . . . . .	266	268	266	267	533	2	2	4	1	1	2	4	4	4	1	1	35
Cholera morbus . . . . .	26	16	17	16	33	8	2	10	4	4	4	4	4	3	1	32	214
Conjunctive chill . . . . .	16	16	14	16	30	8	2	10	4	4	4	4	4	6	1	1	105
Croup . . . . .	135	79	134	78	212	1	1	2	1	1	1	1	1	7	1	2	382
Diarrhea . . . . .	60	45	53	40	93	5	7	12	1	8	3	6	6	18	2	1	159
Diphtheria . . . . .	182	210	171	191	362	17	17	34	1	1	1	1	1	5	2	78	43
Dysentery . . . . .	79	80	73	76	149	5	5	10	1	1	1	1	1	4	4	16	159
Erysipelas . . . . .	43	33	42	33	75	1	1	2	1	1	1	1	1	4	4	18	78
Enterocolitis . . . . .	27	21	24	17	41	3	3	6	1	1	1	1	1	4	4	4	48
Krysipelas . . . . .	2	8	2	11	13	1	3	4	1	1	1	1	1	4	4	19	16
Fever, bilious . . . . .	12	12	12	11	23	1	1	2	1	1	1	1	1	4	4	24	159
Fever, catarrhal . . . . .	80	79	78	77	155	2	2	4	1	1	1	1	1	4	4	1	27
Fever, cerebro-spinal . . . . .	12	15	10	14	24	2	2	4	1	1	1	1	1	4	4	13	111
Fever, congestive . . . . .	4	3	2	3	5	2	2	4	1	1	1	1	1	4	4	2	14
Fever, continued . . . . .	5	8	5	8	13	6	5	11	1	2	2	2	2	4	4	2	13
Fever, intermittent . . . . .	54	57	48	51	99	1	1	2	1	1	1	1	1	4	4	2	111
Fever, malarial . . . . .	8	6	8	6	14	1	1	2	1	1	1	1	1	4	4	2	14
Fever, pernicious . . . . .	64	64	57	59	116	1	1	2	1	1	1	1	1	4	4	64	64
Fever, puerperal . . . . .	12	11	11	9	20	1	1	2	1	1	1	1	1	4	4	23	23
Fever, remittent . . . . .	136	133	128	126	263	1	1	2	1	1	1	1	1	4	4	286	286
Fever, scarlet . . . . .	1	1	1	1	2	1	1	2	1	1	1	1	1	4	4	1	599
Fever, traumatic . . . . .	329	270	292	243	535	30	24	54	159	142	115	23	11	4	4	1	599
Fever, typhoid . . . . .																	

TABLE B—Continued.

CLASS ONE—ZYMOTIC DISEASES.	TOTAL.		NATIONALITY.						SOCIAL RELATIONS.							
	Males.	Females.	American.		Foreign.		Not Rep't'd		Single.	Married.		Widow.	Widow.	Not Rep't'd		Total.
			M.	F.	M.	F.	M.	F.		M.	F.			M.	F.	
ORDER ONE—Continued.																
Fever, typho mal . . . . .	61	69	50	61	11	8	1	1	33	35	21	21	10	3	130	
Erysipelas . . . . .	3	3	3	3	4	2	1	1	6	3	15	3	4	1	35	
Measles . . . . .	25	10	20	4	1	1	1	1	3	3	1	1	1	1	35	
Milk sickness . . . . .	3	3	3	2	1	1	1	1	2	1	1	1	1	1	7	
Mumps . . . . .	1	2	1	1	1	1	1	1	1	1	1	1	1	1	6	
Scarlet fever . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	
Small-pox . . . . .	70	85	70	15	85	1	1	1	70	85	15	15	15	15	155	
puerperal peritonitis . . . . .	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
puerperal septicæmia . . . . .	52	69	43	58	8	10	1	1	25	25	21	40	4	1	121	
puerperal pyæmia . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Small-pox . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Total . . . . .	1,711	1,705	1,588	1,594	97	93	26	18	1,297	1,216	341	381	94	20	3,416	
ORDER TWO—ENTHERIC.																
Syphilis, acquired . . . . .	10	9	8	8	1	1	1	1	7	2	2	4	3	1	19	
Syphilis, congenital . . . . .	11	10	11	10	1	1	1	1	10	10	1	1	1	1	21	
Total . . . . .	21	19	19	18	2	2	2	2	17	12	3	5	4	2	40	
ORDER THREE—DIETIC.																
Delirium tremens . . . . .	9	1	7	1	1	1	1	1	2	1	4	1	1	2	9	
Eczema . . . . .	3	3	3	3	1	1	1	1	3	3	1	1	1	1	4	
Insanitation . . . . .	127	108	125	102	1	4	1	2	114	95	11	5	7	1	235	
Intemperance . . . . .	12	11	11	7	1	1	1	1	7	7	1	1	1	1	13	
Purpura . . . . .	4	4	4	4	1	1	1	1	3	4	1	1	1	1	13	
Urticaria . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Total . . . . .	156	118	151	111	2	5	3	2	126	100	23	10	7	3	274	



TABLE B—Continued.

CLASS TWO—CONSTITUTIONAL DISEASES.	TOTAL.		NATIONALITY.						SOCIAL RELATIONS.							
	Males.	Females.	American.		Foreign.		Not Reported.		Single.		Married.		Widower.	Widow.	Not Reported.	
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
ORDER ONE—DIATHETIC.																
Anemia	12	15	11	15	1	1			7	4	3	2	8	2	4	27
Anasarca	6	5	6	5					3	1	2	1	2	2	2	11
Ascites	5	3	5	3					2	13	5	47	40	8	17	2
Cancer	70	64	56	52	14	10			2	13	5	47	40	8	17	134
Cancer, bladder		21	1	19		1					3	7	14		4	1
Cancer, breast	7	7	5	6	2	1			2	2	1	26	12	10	3	21
Cancer, liver	39	21	22	15	15	6					2	21	7	1	1	60
Cancer, stomach		37		31		5					2	21	7	1	2	37
Cancer, uterus		3		3							3	3	10		3	3
Chlorosis	80	85	66	70	13	13			28	28	26	40	31	10	25	166
Dropsy	2	2	2	3		1			1	1	1	4	1		6	6
Gout	4	3	3	3					1	1	2	3	3		7	7
Leucocythemia	4	3	3	3					1	1	2	3	2		5	5
Lymphadenoma	1	1	1	4					1	1	2	20	18	4	1	92
Rheumatism	43	44	38	39	7	4			23	16	16	20	18	4	10	92
Total	275	316	216	268	52	41	7	7	83	62	150	160	86	86	6	591
ORDER TWO—TUBERCULAR.																
Abscess, pso s		3	2	3					1	2	1	1	1			5
Hydrocephalus	2	19	30	18		1			30	18						49
Melanosis	2	2		1												2
Meningitis, tubercular	42	46	39	46	2		1		40	45	1	1	1	1	1	88
Morbus coxarius	2	4		4						2	2	1	2			6
Phthisis pulmonalis	835	1,123	727	1,044	84	63	24	21	341	396	406	597	62	115	26	1,983



TABLE B—Continued.

CLASS THREE—LOCAL DISEASES.	TOTAL.		NATIONALITY.						SOCIAL RELATIONS.							
	Males.	Females.	Americans.		Foreign.		Not Reported.		Single.		Married.		Widower.	Widow.	Not Reported.	
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
ORDER ONE—NERVOUS SYSTEM.																
Apoplexy . . . . .	127	89	94	72	24	16	9	1	14	13	84	35	23	41	6	216
Brain abscess . . . . .	7	5	4	5	2	2	1	2	3	4	4	1	1	5	1	12
Brain congestion . . . . .	115	86	110	78	5	6	1	2	99	67	14	14	2	5	1	201
Brain disease . . . . .	39	37	35	35	4	2	2	2	29	30	9	7	1	1	1	76
Brain effusion . . . . .	3	1	3	1	1	1	1	1	1	1	2	1	1	1	1	4
Brain fever . . . . .	14	21	14	21	1	1	1	1	12	20	2	1	1	1	1	35
Brain, hyperemia . . . . .	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
Brain, paralysis . . . . .	36	17	31	16	5	1	1	1	2	4	24	7	9	6	1	4
Brain, softening . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Brain, tumor . . . . .	57	46	51	42	5	1	1	3	48	38	6	5	2	3	1	53
Cerebritis . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chorea . . . . .	134	108	130	99	1	4	3	5	133	107	1	1	1	2	1	103
Convulsions . . . . .	24	27	21	25	1	2	2	2	18	15	4	4	1	3	1	2
Epilepsy . . . . .	8	8	5	5	2	1	1	3	3	1	5	4	1	3	1	16
Insanity . . . . .	4	4	4	4	1	1	1	1	1	1	1	1	1	1	1	4
Locomotor ataxia . . . . .	129	126	127	125	1	1	1	1	118	114	10	8	1	4	1	255
Meningitis . . . . .	34	30	33	30	1	1	1	1	28	29	5	1	1	1	1	84
Meningitis, cerebral . . . . .	14	20	14	20	1	1	1	1	12	19	1	1	1	1	1	34
Meningitis, spinal . . . . .	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	5
Muscular atrophy . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Myelitis . . . . .	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1
Nervous prostration . . . . .	16	18	13	14	3	3	1	1	4	4	9	10	4	4	1	34
Neuralgia . . . . .	1	2	1	2	1	1	1	1	3	1	1	2	1	1	1	3
Neurasthenia . . . . .	161	167	130	145	25	16	6	6	27	25	96	66	37	64	1	328
Paralysis . . . . .	5	2	5	2	1	1	1	1	5	2	2	2	1	1	1	2
Spina bifida . . . . .	2	2	2	2	1	1	1	1	2	2	4	2	1	1	1	2
Spinal sclerosis . . . . .	16	16	16	16	1	1	1	1	12	8	4	4	1	1	1	2
Spine, caries of . . . . .	20	10	19	10	1	1	1	1	15	8	4	2	1	1	1	2
Spine disease . . . . .	20	10	19	10	1	1	1	1	15	8	4	2	1	1	1	2
Tetanus . . . . .	972	841	866	766	81	53	25	22	586	514	292	180	81	135	13	1,813
Total . . . . .	972	841	866	766	81	53	25	22	586	514	292	180	81	135	13	1,813





TABLE B—Continued.

CLASS THREE—LOCAL DISEASES.	TOTAL.				NATIONALITY.						SOCIAL RELATIONS.					
	Males.	Females.	American.		Foreign.		Not Rep't'd		Single.	Married.		Widower.	Widow.	Not Rep't'd		Total.
			M.	F.	M.	F.	M.	F.		M.	F.					
ORDER FOUR—DIGESTIVE.																
Bowels, catarrh.	9	20	9	18	4	2	1	1	7	11	1	1	3	1	9	46
Bowels, congestion.	26	3	22	2	2	1	1	1	14	3	1	1	1	1	1	13
Bowels, hemorrhage.	10	19	17	17	2	2	1	1	7	6	1	1	9	1	1	38
Bowels, obstruction.	19	6	17	6	1	1	1	1	12	1	1	1	3	1	1	13
Bowels, ulceration.	7	2	5	2	1	1	1	1	3	4	1	1	1	1	1	10
Colic.	9	4	6	4	1	1	1	1	4	4	1	1	1	1	1	18
Calculus.	9	10	8	9	1	1	1	1	2	5	1	1	1	1	1	19
Dyspepsia.	9	8	8	9	1	1	1	1	4	6	1	1	1	1	1	18
Enteritis.	11	80	110	78	4	2	1	1	92	56	1	1	8	2	1	194
Gall stones.	3	1	3	1	1	1	1	1	2	16	1	1	1	1	1	19
Gastritis.	54	70	45	62	9	4	4	4	27	24	32	6	10	2	1	124
Gastro-enteritis.	30	24	27	20	3	4	1	1	16	9	2	1	2	1	1	54
Hemorrhoids.	31	28	29	21	2	2	2	2	11	9	18	3	4	1	1	57
Hepatitis.	9	8	7	6	4	4	1	1	3	3	4	1	1	1	1	17
Hernia.	2	4	2	4	2	2	1	1	2	3	1	1	1	1	1	6
Indigestion.	14	4	12	4	3	1	1	1	8	5	3	3	1	1	1	18
Jaundice.	14	8	11	4	3	1	1	1	2	3	3	1	1	1	1	22
Liver, abscess.	9	9	4	2	3	1	1	1	3	2	1	1	1	1	1	14
Liver, atrophy.	2	2	2	2	1	1	1	1	1	2	1	1	1	1	1	4
Liver, cirrhosis.	20	9	15	16	11	2	1	1	3	6	2	5	3	1	1	29
Liver, congestion.	9	7	8	7	2	1	1	1	4	3	3	2	1	1	1	16
Liver, disease.	16	8	15	7	2	1	1	1	9	5	5	3	1	1	1	24
Liver, hypertrophy.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
Liver, sclerosis.	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	4
Liver, stricture.	65	84	58	74	6	9	1	1	34	24	27	51	2	1	2	149
Peritonitis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Scurvy.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Stomach catarrh.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Stomach congestion.	15	23	14	23	1	1	1	1	13	8	6	1	7	1	1	43
Stomach hemorrhage.	4	18	3	16	2	2	1	1	3	4	11	3	4	1	1	28
Stomach ulceration.	10	6	8	6	1	1	1	1	3	4	1	1	1	1	1	7
Stomatitis.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2

Tonsillitis . . . . .	7	1	7	1	1	7	1	1	7	2	1	1	1	1	186	36	80	12	7	955
Typoidus . . . . .	3	1	3	1	1	3	1	1	3	1	3	1	1	1	186	36	80	12	7	955
Total . . . . .	528	467	466	420	58	40	4	7	289	194	191	8	7	1	186	36	80	12	7	955
ORDER FIVE—URINARY.																				
Albuminures . . . . .	13	10	10	9	8	1	. . . . .	. . . . .	4	3	8	7	1	. . . . .	36	80	. . . . .	. . . . .	. . . . .	23
Bladder, hemorrhage . . . . .	1	1	1	1	1	1	. . . . .	. . . . .	1	3	3	1	1	. . . . .	6	5	4	. . . . .	. . . . .	23
Cystitis . . . . .	82	13	27	12	6	1	. . . . .	. . . . .	3	3	24	1	6	. . . . .	9	5	4	. . . . .	. . . . .	45
Diabetes . . . . .	27	20	23	15	2	4	2	1	7	6	15	9	5	1	9	5	5	1	. . . . .	47
Isochuria renalis . . . . .	1	1	1	1	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	2
Kidney disease . . . . .	8	8	6	8	2	6	1	1	4	2	3	2	9	. . . . .	6	1	. . . . .	. . . . .	. . . . .	16
Nephria . . . . .	78	46	64	39	13	6	1	1	13	10	55	26	1	. . . . .	39	9	6	1	1	124
Nephritis . . . . .	44	18	38	16	5	2	1	1	16	6	19	11	8	1	11	8	1	1	. . . . .	62
Nephritis . . . . .	6	5	5	. . . . .	1	4	3	1	6	4	4	1	1	. . . . .	1	1	1	1	. . . . .	6
Prostatitis . . . . .	33	38	22	33	8	. . . . .	. . . . .	. . . . .	6	10	16	22	10	. . . . .	22	10	5	1	1	71
Uræmia . . . . .	1	1	. . . . .	1	. . . . .	. . . . .	. . . . .	. . . . .	1	1	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	1
Urine suppression . . . . .	1	1	. . . . .	1	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	1
Total . . . . .	243	156	197	135	39	18	7	3	53	41	146	91	40	21	40	21	4	4	3	399
ORDER SIX—GENITIVE.																				
Metritis . . . . .	11	. . . . .	11	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	11	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	11
Ovarian tumor . . . . .	13	. . . . .	12	. . . . .	. . . . .	1	. . . . .	. . . . .	5	. . . . .	. . . . .	6	. . . . .	2	. . . . .	2	. . . . .	. . . . .	. . . . .	13
Total . . . . .	. . . . .	24	. . . . .	23	. . . . .	1	. . . . .	. . . . .	. . . . .	5	. . . . .	17	. . . . .	2	. . . . .	2	. . . . .	. . . . .	. . . . .	24
ORDER EIGHT—INTEGUMENTARY.																				
Abscess . . . . .	32	23	31	22	1	1	. . . . .	. . . . .	21	12	6	4	3	7	3	7	2	. . . . .	. . . . .	55
Cellulitis . . . . .	1	3	. . . . .	2	. . . . .	. . . . .	1	1	. . . . .	. . . . .	. . . . .	3	. . . . .	. . . . .	. . . . .	. . . . .	1	. . . . .	. . . . .	4
Total . . . . .	33	26	31	24	1	1	1	1	21	12	6	7	3	7	3	7	3	. . . . .	. . . . .	59
ORDER NINE—MISCELLANEOUS.																				
Tumor . . . . .	8	9	8	8	. . . . .	1	. . . . .	. . . . .	3	3	4	3	1	3	1	3	. . . . .	. . . . .	. . . . .	17
Total . . . . .	8	9	8	8	. . . . .	1	. . . . .	. . . . .	3	3	4	3	1	3	1	3	. . . . .	. . . . .	. . . . .	17
Total Local Diseases . . . . .	2,975	2,621	2,583	2,318	325	237	67	66	1,475	1,167	1,165	921	277	487	277	487	58	. . . . .	. . . . .	5,596

TABLE B—Continued.

CLASS FOUR— DEVELOPMENTAL DISEASE.	TOTAL.		NATIONALITY.						SOCIAL RELATIONS.						
	Males.	Females.	American.		Foreign.		Not Reported.		Single.	Married.		Widow.	Not Reported.		
			M.	F.	M.	F.	M.	F.		M.	F.				
ORDER ONE—CHILDREN.	7	1	7	1					7	1					
Atelectasis . . . . .															8
Birth injuries . . . . .															10
Birth, premature . . . . .	112	83	112	83					112	83					195
Cyanosis . . . . .	30	28	30	28					30	28					58
Dentition . . . . .	8	4	8	4					8	4					12
Hemorrhage, umbilical . . . . .	4	1	4	1					4	1					5
Malformation . . . . .	8	3	8	3					8	3					11
Malnutrition . . . . .	4	8	4	8					4	8					12
Total . . . . .	179	132	179	132					179	132					311
ORDER TWO—WOMEN.															
Amenorrhea . . . . .		3		3						3					3
Climacteria . . . . .		4		4						3					4
Ovariectomy . . . . .		1		1							1				1
Parturition . . . . .		29		27		2				2			1		29
Placenta previa . . . . .		4		4											4
Pilegmata dolens . . . . .		2		2											2
Post partum hemorrhage . . . . .		12		12											12
Puerperal eclampsia . . . . .		30		28		2				1					30
Uterine hemorrhage . . . . .		11		10		1									11
Uterine tumor . . . . .		2		2											2
Uterine disease . . . . .		3		3											3
Uterus, rupture . . . . .		1		1											1
Uterus, ulceration . . . . .		1		1											1
Total . . . . .	103	98	103	98	5					9	93	1			103

## ORDER THREE—OLD AGE.

Old age . . . . .	144	166	103	121	33	39	8	6	11	7	63	33	65	119	5	7	310
Order Four—Nutrition.																	
Asthenia . . . . .	6	10	6	10	17	17	2	...	4	4	1	1	1	5	...	...	16
Debility . . . . .	93	37	74	70	2	4	2	...	25	18	38	16	27	44	5	...	180
Exhaustion . . . . .	29	31	25	22	2	3	1	5	14	11	6	12	7	8	2	...	60
Marasmus . . . . .	36	28	31	25	4	3	1	...	27	24	5	1	4	8	...	...	64
Total . . . . .	164	156	136	127	23	24	5	5	70	57	48	32	39	60	7	7	320
Total developmental diseases . . . . .	487	557	418	478	56	68	13	111	260	205	111	158	104	180	12	14	1,044

TABLE B—Continued.

CLASS FIVE—VIOLENCE.	TOTAL.		NATIONALITY.						SOCIAL RELATIONS.								
	Males.	Females.	American.			Foreign.			Not Reported.	Single.		Married.		Widower.	Widow.	Not Reported.	
			M.	F.	Total.	M.	F.	Total.		M.	F.	Total.	M.			F.	
ORDER ONE—ACCIDENTS AND NEGLIGENCE.	248	78	211	70	25	6	12	2	134	43	89	19	17	15	8	1	395
Accident . . . . .	89	3	70	3	11	1	8	1	89	2	33	1	4	2	10	1	92
Accident, railroad . . . . .	6	1	5	1	1	2	1	1	13	20	1	1	2	2	5	1	43
Boiler explosion . . . . .	16	27	15	25	4	2	6	1	1	1	2	3	2	1	2	2	55
Burn . . . . .	5	1	4	1	7	2	1	1	36	4	8	1	2	1	6	6	60
Coal mine . . . . .	52	8	39	6	4	2	6	1	4	1	6	1	1	1	2	2	60
Drowning . . . . .	13	2	11	3	1	1	1	2	3	3	8	1	1	1	2	1	15
Lightning . . . . .	12	4	11	2	3	1	2	1	14	1	7	2	1	1	2	2	16
Poison . . . . .	24	2	19	2	1	1	2	1	1	1	2	1	1	1	2	2	28
Shooting . . . . .	3	1	2	1	1	1	2	1	1	1	2	1	1	1	1	1	3
Sunstroke . . . . .	3	1	2	1	1	1	2	1	1	1	2	1	1	1	1	1	3
Total . . . . .	468	125	385	112	53	11	30	2	247	73	162	33	29	18	30	1	593
ORDER TWO—HANGING.	4	1	3	1	1	1	1	1	1	1	1	1	3	1	1	1	4
Judicial . . . . .	4	1	3	1	1	1	1	1	1	1	1	1	3	1	1	1	4
By a mob . . . . .	4	1	3	1	1	1	1	1	1	1	1	1	3	1	1	1	4
Total . . . . .	8	2	7	2	2	2	2	2	2	2	2	2	6	2	2	2	8
ORDER THREE—HOMICIDE.	18	4	16	3	1	1	1	1	8	1	9	2	1	1	1	1	22
Homicide . . . . .	6	2	5	2	1	1	1	1	3	1	1	2	1	1	1	1	8
Shooting . . . . .	24	6	21	5	2	1	1	1	11	1	10	4	2	1	1	1	30
Total . . . . .	42	10	37	8	3	2	2	2	19	2	20	6	3	2	2	2	32
ORDER FOUR—SUICIDE.	27	19	17	15	8	4	2	2	7	4	14	12	4	1	2	2	46
Suicide . . . . .	1	4	1	2	2	2	2	2	1	1	1	2	1	1	2	1	5
Drowning . . . . .	12	5	8	5	2	2	2	2	6	2	2	3	1	1	2	1	17
Hanging . . . . .	8	4	4	4	1	1	1	1	3	2	5	1	1	1	2	1	12
Poison . . . . .	8	4	4	4	1	1	1	1	6	2	4	1	1	1	2	1	17

Shooting. . . . .	14	1	13	1	1	1	6	4	8	5	1	1	1	1	15
Total . . . . .	62	33	47	27	11	6	4	24	29	19	4	3	5	2	95
Total violence. . . . .	562	164	460	144	67	18	35	282	83	205	38	22	37	3	726
Unknown . . . . .	169	180	150	156	14	20	5	109	92	50	10	27	3	19	349
RECAPITULATION.															
Zymotic diseases . . . . .	1,889	1,844	1,759	1,725	100	99	30	1,441	1,330	367	57	104	24	15	3,733
Constitutional diseases . . . . .	1,225	1,573	1,064	1,438	139	106	32	529	565	565	98	207	33	28	2,798
Local diseases . . . . .	2,975	2,621	2,583	2,318	325	237	67	1,475	1,167	1,165	277	487	58	46	5,596
Developmental diseases . . . . .	487	557	418	478	56	68	13	260	205	111	104	180	12	14	1,044
Violence . . . . .	562	164	460	144	67	18	35	282	83	205	38	22	37	3	1,726
Unknown . . . . .	169	180	150	156	14	20	5	106	92	50	10	27	3	19	349
Grand total . . . . .	7,307	6,889	6,424	6,259	701	548	182	4,093	3,442	2,463	584	1,027	167	125	14,246

## TAB

## Showing Number of Deaths by Grouped Ages

CLASS ONE. ZYMOTIC DISEASES.	Under 1 Year.		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>ORDER ONE.</b>														
Anthrax									1				1	
Cholera infantum	197	201	66	65	1	2	2							
Cholera morbus	1	1	1	1			1				2	3	1	
Congestive chill	1	1	1	1					8		1	6	2	
Croup	32	13	71	47	24	13	2	3		1	4	1	3	2
Diarrhea	16	10	6	16	1	2		1			1	1	1	
Diphtheria	34	15	91	91	42	81	8	10	4	5	2	5	5	1
Dysentery	17	7	28	27	7	2	2	2		2	4	4	1	
Enterocolitis	29	19	11	12		1		1						
Erysipelas	4	4					3	2					4	
Fever, bilious	1	1				1				2				1
Fever, catarrhal	1	3	3	4	1		3				1			
Fever, cerebro-spinal	21	11	10	20	18	14	5	2	8	22	5	7	5	2
Fever, congestive	1		2	2		1	3	2	1			1	1	3
Fever, continued			2	1		1			1			1	1	
Fever, intermittent			2	2		1					1	1	1	
Fever, malarial	6	4	8	6	6	4	2	2	3	8	10	9	5	8
Fever, pernicious	3	2	1					1			1	1	1	
Fever, puerperal									5	1	30	1	23	
Fever, remittent	3		1	4	2				1				1	
Fever, scarlet	12	12	73	69	36	35	6	21	2	3	1	1		
Fever, traumatic														
Fever, typhoid	3	3	21	9	16	12	28	30	32	42	82	59	44	42
Fever, typhoid, mal	1	2	5	4	3	6	12	8	3	11	18	17	3	5
Flux	1													
Gangrene		1		1	1				1				6	
Measles			2	1				1		1	1			1
Milk sickness					2					1			1	
Mumps			1	1										
Pertussis	42	55	26	28	1	2	1	1						
Puerperal peritonitis										3		7		3
Puerperal septæmia										1		9		5
Pyæmia	4	2	3	5	3	1	4	1	1	6	8	15	8	14
Small-pox												1		
Total	431	369	435	416	164	180	82	78	61	107	141	179	92	116
<b>ORDER TWO—ENTHETIC.</b>														
Syphilis, acquired										1	3	3	2	1
Syphilis, congenital	9	9	1	1							1			
Total	9	9	1	1						1	4	3	2	1
<b>ORDER THREE—DINTIC.</b>														
Delirium tremens											3		2	
Eosæmia	3			1										
Inanition	107	87	3	5		1			3		1	1		
Intemperance											2		1	1
Purpura	1	1			2	1			4		1			
Urticaria	1													
Total	112	88	3	6	2	2		1	3	1	7	1	3	1
<b>ORDER FOUR—PARASITIC.</b>														
Aphtha		1												
Thrush	1													
Trichinosis		1												
Total	1	2												
Total zymotic diseases	553	468	439	423	166	182	82	79	64	109	152	183	97	118



LE C.

*and Sex, Year Ending September 30, 1886.*

40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 to 100.		Over 100		Not Rept'd		Males.	Females.	Total.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
..	..	1	..	1	..	1	..	..	..	..	..	..	..	..	..	4	2	6	
1	..	5	2	3	1	6	3	4	1	..	..	..	..	1	..	266	268	534	
3	1	2	1	1	3	..	1	..	..	..	..	..	..	1	..	26	9	35	
1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	16	16	32	
9	1	6	2	6	6	9	3	1	1	..	..	..	..	1	..	135	79	214	
1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	60	45	105	
3	4	..	5	9	11	4	9	1	5	..	..	..	..	1	1	182	210	392	
1	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	79	80	159	
1	2	6	5	2	3	4	1	2	1	..	..	..	..	..	..	43	33	76	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	27	21	48	
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	8	10	
2	6	3	2	1	1	1	1	1	1	..	..	..	..	1	2	12	12	24	
1	1	2	1	1	1	..	..	..	..	..	..	..	..	1	..	80	79	159	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	12	15	27	
3	1	1	..	1	..	..	..	..	..	..	..	..	..	1	..	4	3	7	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	8	13	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	54	57	111	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	6	14	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	64	64	128
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12	11	23	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	2	136	133	269	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2
32	27	23	19	23	12	13	5	1	1	..	..	..	..	12	9	329	270	599	
4	4	7	3	3	3	5	5	1	1	..	..	..	..	1	1	61	69	130	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	2	5	
1	..	1	3	6	2	3	2	6	..	..	..	..	..	..	..	25	10	35	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	4	7	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	2	5	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70	85	155	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15	15	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18	18	36
6	13	3	3	6	7	5	1	1	..	..	..	..	..	..	1	52	69	121	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	
71	72	67	49	67	58	52	42	20	16	..	..	..	..	28	23	1,711	1,705	3,416	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	9	19	
1	2	4	2	..	..	..	..	..	..	..	..	..	..	..	..	11	10	21	
1	2	4	2	..	..	..	..	..	..	..	..	..	..	..	..	21	19	40	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
1	..	2	..	..	..	..	..	..	..	..	..	..	..	1	..	9	..	9	
2	..	4	1	3	4	2	5	..	3	..	..	..	..	2	1	3	1	4	
..	..	4	2	2	..	2	..	..	..	..	..	..	..	1	..	127	108	235	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12	1	13	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	8	12	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	
3	1	10	3	5	4	4	6	..	3	..	..	..	..	4	1	156	118	274	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	2
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	3	3
75	75	81	54	72	62	56	48	20	19	..	..	..	..	32	24	1,889	1,844	3,733	

TABLE

CLASS TWO—CONSTITUTIONAL DISEASES.	Under 1 Year.		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>ORDER ONE—DIATHETIC.</b>														
Anæmia . . . . .	2	2	..	..	1	1	..	..	1	..	2	4	2	..
Anasarca . . . . .	..	..	..	..	1	1	..	..	1	..	1	1	1	..
Ascites . . . . .	..	..	1	..	..	..	..	..	1	..	1	3	2	7
Cancer . . . . .	..	..	..	..	1	1	1	..	1	1	..	..	..	11
Cancer, bladder . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	4
Cancer, breast . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cancer, liver . . . . .	..	..	..	..	..	..	..	..	1	..	1	..	1	..
Cancer, stomach . . . . .	..	..	..	..	..	..	..	1	..	..	1	..	1	1
Cancer, uterus . . . . .	..	..	..	..	..	..	..	..	..	..	3	..	..	5
Chlorosis . . . . .	..	..	..	..	..	..	1	..	1	..	1	..	..	..
Dropsy . . . . .	5	4	1	4	2	1	7	3	1	3	6	6	2	11
Goitre . . . . .	1	..	..	..	..	..	..	..	..	..	..	1	1	..
Leucocythæmia . . . . .	..	..	1	..	..	..	..	..	..	..	..	..	1	2
Lymphadenoma . . . . .	..	..	1	..	..	..	1	..	1	..	1	..	1	..
Rheumatism . . . . .	1	..	2	1	5	3	4	6	6	3	3	6	3	3
Total . . . . .	9	6	5	6	10	6	13	10	12	9	17	24	20	37
<b>ORDER TWO—TUBERCULAR.</b>														
Abscess, psoas . . . . .	..	..	..	1	..	..	..	..	..	1	2	1	..	..
Hydrocephalus . . . . .	20	10	10	7	..	..	..	..	1	..	..	..	..	..
Melanosis . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Meningitis, tubercular . . . . .	10	11	22	21	2	12	2	1	1	..	4	1	1	..
Morbus, coxarius . . . . .	..	1	..	..	..	..	..	..	1	..	2	..	..	..
Phthisis, pulmonalis . . . . .	11	12	17	16	6	12	15	38	51	128	255	389	173	210
Pott's disease . . . . .	..	..	..	1	1	1	..	1	1	..	..	..	..	..
Rachitis . . . . .	1	..	2	2	1	..	..	..	..	..	..	..	..	..
Scrofula . . . . .	6	9	2	7	1	4	..	2	2	2	1	1	2	1
Tabes, mesenterica . . . . .	6	3	2	5	1	1	2	1	1	2	..	3	2	2
White swelling . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total . . . . .	54	46	55	59	13	30	19	43	56	134	261	398	179	213
Total constitutional diseases . . . . .	63	52	60	65	23	36	32	53	68	143	278	422	199	250



TABLE

CLASS THREE—LOCAL DISEASES.	Under 1 Year.		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>ORDER ONE—NERVOUS SYSTEM.</b>														
Apoplexy . . . . .	3	4			2	1	1	1			3	3	7	3
Brain, abscess . . . . .	1				2				1	1	1		2	2
Brain, congestion . . . . .	37	28	37	18	11	9	2	3	8	4	1	5	1	4
Brain, disease . . . . .	10	7	5	2	1		4	5	3		5	9	3	8
Brain, effusion . . . . .		1									1		1	
Brain, fever . . . . .	4	9	6	8	1	2								
Brain, hyperaemia . . . . .													1	1
Brain, paralysis . . . . .										1			1	1
Brain, softening . . . . .			1	1					1					
Brain, tumor . . . . .											1			
Cerebritis . . . . .	14	12	17	15	9	6	1		4	1	5	2		2
Chorea . . . . .		1												
Convulsions . . . . .	102	77	21	25	8	2	1	1			2	8	8	3
Epilepsy . . . . .			1	1	1		1	4	3	2	6	3	1	1
Insanity . . . . .											2	3	1	1
Locomotor ataxia . . . . .														
Meningitis . . . . .	41	35	51	41	10	22	4	8	6	5	4	5	7	5
Meningitis, cerebral . . . . .	8	10	10	9	6	3	1	3	2	4	1	2	1	
Meningitis, spinal . . . . .	1	5	7	7	1	4	1	3	2	4	1	2		
Muscular atrophy . . . . .														
Myelitis . . . . .				1	1						1	1		
Nervous prostration . . . . .				1							1	1	1	1
Neuralgia . . . . .														2
Neurasthenia . . . . .											1			
Paralysis . . . . .	1	3	2	3	1	3	1		3	2	5	2	7	8
Spina bifida . . . . .	5	2												
Spinal sclerosis . . . . .														
Spine, caries of . . . . .				1	3							1		
Spine, disease . . . . .	4			2	3	2	2	2	1	1	2		2	
Tetanus . . . . .	7	4	4	1	3		2	2	1	1	1		1	
Total . . . . .	238	198	162	139	57	53	19	29	33	22	39	46	44	42
<b>ORDER TWO—CIRCULATORY.</b>														
Aneurism . . . . .													1	
Angina pectoris . . . . .	1						1		1		2		1	1
Congestion . . . . .	7	2	2	2		1					1	1	2	
Endo-carditis . . . . .					2				1	1	1			
Heart, clot . . . . .									1	1				
Heart, dilatation . . . . .													1	
Heart, disease . . . . .	6	5	1	6	2	6	4	2	5	5	15	21	13	19
Heart, fatty . . . . .													1	1
Heart, hypertrophy . . . . .							1					1	1	
Heart, paralysis . . . . .					1		1	1			2	3	3	2
Heart, val. dis. of . . . . .	1	1		1	1	1	3	2	3	4	5	2	2	3
Hydropericardium . . . . .														
Pericarditis . . . . .			1		1		2	2	1	3	1	2		
Phlebitis . . . . .									1			1		
Syncope . . . . .													1	
Thrombus . . . . .														
Total . . . . .	15	8	4	9	7	8	5	9	12	13	26	36	28	29

C—Continued.

40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 to 100.		Over 100.		Not Rep't'd		Males.	Females.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
9	16	27	16	25	19	33	17	15	7					3	1	127	89	216
9	7	2	3	3	3	1	2	2						1		7	5	12
2	5	2		2	1	2										115	86	201
1																39	37	76
	1	1	1	1												3	1	4
																14	21	35
																2	1	1
																2	2	4
6	1	5	8	10	1	11	3	2						1	1	36	17	53
																1	1	1
3	1	1	4	2	3			1						1		57	46	103
																1	2	2
	1	4	1	1	1	1			1					1		134	108	242
2	4	2	1	2	1	1			1						1	24	27	51
1	1	1		1	1											8	8	16
1	1	1		2	1											4	4	4
1	4	1		1	1			1							1	129	126	255
1	1	1		1	1									2		34	30	64
																14	20	34
	1	1		1	1											1	1	1
1	1	1		1	5	4		2								2	3	5
2	6	1	3	5	4	4		1								16	18	34
								1								1	2	3
																	2	2
8	13	28	17	36	35	43	53	22	16		3		1	4	8	161	167	328
				2												5	2	7
																2	2	2
																	2	2
																16	9	25
																20	10	30
47	66	78	59	97	69	97	76	47	24		3		1	14	14	972	841	1,813
																2		2
																17	13	30
1	1															17	10	27
1																5	3	8
1																2	2	4
2																9	4	13
16	13	22	34	33	46	33	36	8	15					3	3	161	211	372
6	2	2		2	2	1	2	2	1							13	8	21
																7	6	13
1	8	5	4	4	1	2	2	2	1							21	22	43
7	1	4	5	13	9	11	6	5	2					3	3	53	42	95
																8	5	13
	1	2	2	1	2	3	3							1	1	18	10	28
																1	1	2
																2		2
																1		1
37	28	47	48	68	64	59	56	21	21					8	8	337	337	674

TABLE

CLASS THREE—LOCAL DISEASES—Con.	Under 1 Year.		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>ORDER THREE—RESPIRATORY.</b>														
Apnea . . . . .			1							1				
Asthma . . . . .											2		3	2
Bronchitis . . . . .	32	27	25	16	5	3	4	1		4	5	9	2	6
Catarrh . . . . .	1	1									1			
Emphysema . . . . .											1		1	
Hæmoptysis . . . . .	3	3	2			1	1			1	5	3	6	5
Hydrothorax . . . . .										1				
Influenza . . . . .	1					1								
Laryngitis . . . . .	6	2	8	12	4		1					2	2	3
Lungs, abscess . . . . .														
Lungs, congestion . . . . .	26	8	8	2	2		2		2	4	1	12	3	4
Lungs, disease . . . . .	1												1	
Lungs, oedema . . . . .			1	1	1							1		
Oedema of Glottis . . . . .	1		1											
Pleurisy . . . . .								1	1		1	2	1	
Pneumonitis . . . . .	81	73	53	44	22	15	10	16	29	19	45	47	42	57
Pneumonitis, catarrhal . . . . .			3											
Pneumonitis, pleuro . . . . .		1		1			1	1						2
Pneumonitis, typho . . . . .	2	1	3	3	3				4	4	3	2	5	1
Total . . . . .	155	121	104	79	37	21	18	21	36	34	65	83	70	80
<b>ORDER FOUR—DIGESTIVE.</b>														
Bowels, catarrh . . . . .	4		3								1			
Bowels, congestion . . . . .	10	5	3	2				2			2	1	2	
Bowels, hemorrhage . . . . .	5				1						1			1
Bowels, obstruction . . . . .	4	3	2		1	1			1	1	3	1	2	1
Bowels, ulceration . . . . .														
Colic . . . . .	2	1	1											
Colitis . . . . .	2	1	2	3							1			
Dyspepsia . . . . .		1	1									1		
Enteritis . . . . .	38	24	30	19	7	3	6	5	2		6	9	4	6
Gall stones . . . . .														
Gastritis . . . . .	10	5	4	6	1	4	2	2		2	1	6	2	6
Gastro-enteritis . . . . .	5	8	5	4	1		1		1	1	6	2	2	2
Hemorrhoids . . . . .														
Hepatitis . . . . .	3		3	1	3	1		1		1	2	1	4	3
Hernia . . . . .	1								1				1	
Indigestion . . . . .	2	1	1	1	1	1							1	1
Intussusception . . . . .	2		1		1		2		2			1	1	1
Jaundice . . . . .	6	2							1				1	
Liver, abscess . . . . .			1		1			1				2		1
Liver, atrophy . . . . .														
Liver, cirrhosis . . . . .											1		2	2
Liver, congestion . . . . .	1	1	1	1	1			1					2	1
Liver, disease . . . . .	2						1		1		2	1	2	1
Liver, hypertrophy . . . . .														
Liver, sclerosis . . . . .													1	
Oesophagus stricture . . . . .														
Peritonitis . . . . .	4	1	4	1	2	6	5	4	9	3	12	27	7	27
Scurvy . . . . .									1	1				
Stomach, catarrh . . . . .												1		
Stomach, congestion . . . . .	1	2	2	5	3			2	2	2	1	2	2	3
Stomach, hemorrhage . . . . .													1	
Stomach, ulceration . . . . .	2		1					1			1	1		4
Stomatitis . . . . .	1	2		2								1		
Tonsillitis . . . . .	1		4		2	1								
Typhlitis . . . . .	1						2							1
Total . . . . .	107	57	69	46	23	19	18	19	22	11	47	64	35	57

## C—Continued.

40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 to 100		Over 100.		Not Rep't'd		Males.	Females.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
5	6	5	3	3	7	3	7	4	2	1	1	1	4	1	4	2	22	40
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	107	104	211
3	5	1	1	1	1	2	3	1	1	1	1	1	1	1	1	4	5	6
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	23	25	48
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	4	8
7	3	5	4	3	5	5	6	3	8	1	1	1	1	1	1	22	21	43
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13	11	24
3	3	5	4	3	5	5	6	3	8	1	1	1	1	1	1	70	57	127
7	3	5	4	3	5	5	6	3	8	1	1	1	1	1	1	2	2	2
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	5
2	1	1	2	2	1	2	2	1	2	2	2	2	2	2	2	11	5	2
48	36	62	51	54	45	51	45	18	17	2	2	8	2	8	2	525	469	994
1	1	1	3	3	2	1	2	2	2	1	1	1	2	1	2	1	3	4
7	1	3	4	4	3	2	2	2	2	1	1	1	2	1	2	6	8	14
7	1	3	4	4	3	2	2	2	2	1	1	1	2	1	2	39	22	61
79	55	85	78	80	72	74	73	37	30	2	4	12	10	854	761	1,615		
1	4	4	3	3	1	1	1	1	1	1	1	1	1	1	1	9	20	9
2	1	1	2	2	5	1	2	1	1	1	1	1	1	1	1	26	3	46
2	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	10	19	13
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	6	38
7	3	1	1	3	3	3	2	6	1	1	1	1	1	1	1	7	2	13
7	8	1	1	4	1	4	3	6	1	1	1	1	1	1	1	6	4	8
2	1	1	1	3	3	3	2	6	1	1	1	1	1	1	1	9	10	10
2	1	1	1	3	3	3	2	6	1	1	1	1	1	1	1	114	80	194
2	2	2	2	6	6	7	3	4	9	4	2	1	2	2	2	3	1	4
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	54	70	124
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	30	24	52
2	2	2	2	6	6	7	3	3	2	1	1	1	1	1	1	2	2	4
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	31	26	57
2	2	2	2	6	6	7	3	3	2	1	1	1	1	1	1	9	8	17
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	4	6
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	4	18
4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	8	22
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	9	14
3	3	2	2	2	2	3	1	1	1	1	1	1	1	1	1	2	2	4
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20	9	29
3	3	2	2	2	2	3	1	1	1	1	1	1	1	1	1	9	7	16
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16	8	24
5	8	6	6	7	2	2	6	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	65	84	149
1	1	1	1	1	2	1	6	1	1	1	1	1	1	1	1	1	2	3
2	2	3	3	5	1	1	1	1	1	1	1	1	1	1	1	15	28	43
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	18	28
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	7
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	1	8
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	4
41	37	50	43	60	52	33	43	12	11	2	1	9	8	528	467	995		

TABLE

CLASS THREE—LOCAL DISEASES—Con.	Under 1 Year.		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>ORDER FIVE—URINARY.</b>														
Albuminurea . . . . .	..	..	..	..	..	1	..	1	1	..	1	2	3	1
Bladder, hemorrhage . . . . .	..	..	..	..	..	1	..	..	..	..	2	2	2	3
Cystitis . . . . .	2	..	..	..	..	1	..	..	..	..	2	2	2	3
Diabetes . . . . .	..	..	1	1	1	1	..	2	..	..	5	..	3	1
Ischuria renalis . . . . .	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Kidney disease . . . . .	..	..	2	..	..	1	..	..	..	..	..	..	..	1
Nephria . . . . .	..	..	..	..	..	1	1	4	1	2	6	6	6	5
Nephritis . . . . .	1	1	4	2	..	2	..	1	2	4	2	3	3	4
Prostatitis . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Uræmia . . . . .	2	2	..	..	..	2	..	1	1	2	1	11	4	6
Urine, suppression . . . . .	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Total . . . . .	5	5	6	3	1	7	3	8	4	6	19	23	21	21
<b>ORDER SIX—GENERATIVE.</b>														
Metritis . . . . .	..	..	..	..	..	..	..	..	1	..	6	..	..	2
Ovarian tumor . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	4
Total . . . . .	..	..	..	..	..	..	..	..	1	..	6	..	..	6
<b>ORDER EIGHT—INTEGUMENTARY.</b>														
Abscess . . . . .	6	5	2	1	2	1	1	2	6	..	5	1	1	4
Cellulitis . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Total . . . . .	6	5	2	1	2	1	1	2	6	..	5	1	1	6
<b>ORDER NINE—MISCELLANEOUS.</b>														
Tumor . . . . .	..	..	1	1	..	..	..	..	2	1	..	1	..	1
Total . . . . .	..	..	1	1	..	..	..	..	2	1	..	1	..	1
Total Local Diseases . . . . .	526	394	348	278	127	109	64	88	113	89	202	259	200	242



## C—Continued.

40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 to 100		Over 100.		Not Rep't'd		Males.	Females.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
2	2	4	3	1	..	1	..	..	..	..	..	..	..	..	..	13	10	23
2	1	2	1	5	3	10	3	6	..	1	..	..	..	..	..	1	1	2
..	2	7	6	5	5	4	2	..	..	1	..	..	1	..	..	32	13	45
..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	27	20	47
3	3	..	1	1	1	2	..	..	..	..	..	..	..	1	..	1	1	2
10	4	16	9	16	8	15	6	7	..	..	..	..	..	..	..	8	8	16
2	2	6	..	9	3	8	1	3	..	..	..	..	..	1	1	78	46	124
..	..	..	..	2	..	4	..	..	..	..	..	..	..	..	..	44	18	62
2	1	2	4	6	1	13	7	1	..	1	..	..	..	..	1	6	6	6
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33	38	71
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
21	15	37	24	46	21	58	19	17	..	3	..	..	1	2	3	243	156	399
..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	11
..	3	..	3	..	1	..	1	..	1	..	..	..	..	..	..	..	13	13
..	5	..	3	..	1	..	1	..	1	..	..	..	..	..	..	..	24	24
3	1	1	..	2	5	2	1	1	1	..	1	..	..	..	..	32	23	55
..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3	4
3	2	2	..	2	5	2	1	1	1	..	1	..	..	..	..	33	26	59
1	2	1	..	1	2	1	..	1	1	..	..	..	..	..	..	8	9	17
1	2	1	..	1	2	1	..	1	1	..	..	..	..	..	..	8	9	17
229	210	300	255	354	286	324	269	136	89	7	8	..	2	45	43	2,975	2,621	5,596

TABLE

CLASS FOUR—DEVELOPMENTAL DISEASES.	Under 1 Year.		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>ORDER ONE—CHILDREN.</b>														
Atelectasis . . . . .	7	1	.	.	.	.	.	.	.	.	.	.	.	.
Birth, injuries . . . . .	6	4	.	.	.	.	.	.	.	.	.	.	.	.
Birth, premature . . . . .	112	83	.	.	.	.	.	.	.	.	.	.	.	.
Cyanosis . . . . .	28	27	1	1	1	.	.	.	.	.	.	.	.	.
Dentition . . . . .	2	3	5	1	.	.	.	.	.	.	.	.	.	.
Hemorrhage, umbilical . . . . .	4	1	.	.	.	.	.	.	.	.	.	.	.	.
Malformation . . . . .	8	3	.	.	.	.	.	.	.	.	.	.	.	.
Malnutrition . . . . .	4	8	.	.	.	.	.	.	.	.	.	.	.	.
Total . . . . .	172	130	6	2	1	.	.	.	.	.	.	.	.	.
<b>ORDER TWO—WOMEN.</b>														
Amenorrhœa . . . . .	.	.	.	.	.	.	.	.	1	.	2	.	.	.
Climacteria . . . . .	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Ovariectomy . . . . .	.	.	.	.	.	.	.	.	.	.	.	.	2	.
Parturition . . . . .	.	.	.	.	.	.	.	.	4	.	10	.	11	.
Phlegmatia dolens . . . . .	.	.	.	.	.	.	.	.	.	.	3	.	1	.
Placenta previa . . . . .	.	.	.	.	.	.	.	.	.	.	3	.	8	.
Postpartum hem . . . . .	.	.	.	.	.	.	.	.	5	.	17	.	6	.
Puerperal eclampsia . . . . .	.	.	.	.	.	.	.	.	1	.	3	.	5	.
Uterine, hemorrhage . . . . .	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Uterine, tumor . . . . .	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Uterus, disease . . . . .	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Uterus, rupture . . . . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Uterus, ulceration . . . . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Total . . . . .	.	.	.	.	.	.	.	.	11	.	38	.	36	.
<b>ORDER THREE—OLD AGE.</b>														
Old age . . . . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<b>ORDER FOUR—NUTRITION.</b>														
Asthenia . . . . .	2	4	.	.	.	.	.	.	.	.	.	.	.	.
Debility . . . . .	12	10	.	1	.	.	.	1	.	.	2	.	3	.
Exhaustion . . . . .	9	6	1	5	.	.	.	.	.	5	2	2	4	.
Marasmus . . . . .	20	14	6	10	.	.	.	.	.	.	.	.	.	.
Total . . . . .	43	34	7	16	.	.	.	1	.	5	4	6	7	.
Total developmental diseases	215	164	13	18	1	.	.	1	.	11	5	42	6	43

## C—Continued.

40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 to 100.		Over 100.		Not Rep'd		Males. *	Females.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	1	8
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	4	10
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	112	83	195
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	28	58
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	4	12
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	1	5
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	3	11
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	8	12
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	8	12
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	179	132	311
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	3
..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	4
..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	29	29
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2
..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	4
..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12	12
..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	30
..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	11
..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2
..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	3	3
..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
..	12	..	4	..	..	..	..	..	..	..	..	..	..	2	..	..	103	103
..	..	..	1	2	6	52	51	70	79	18	21	1	4	1	4	144	166	310
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	1	..	..	..	..	4	..	2	1	..	..	..	2	..	6	10	16
3	1	6	2	10	10	28	29	24	24	3	2	..	..	3	2	93	87	180
..	4	4	..	1	4	5	3	1	2	..	..	..	..	1	..	29	31	60
..	1	1	..	3	2	2	1	3	..	..	..	..	..	1	..	36	28	64
3	3	12	6	14	16	35	37	28	28	4	2	..	..	7	2	164	156	320
3	15	12	11	16	22	87	88	98	107	22	23	1	4	8	8	487	557	1,044

TABLE

CLASS FIVE—VIOLENCE.	Under 1 Year.		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>ORDER ONE—ACCIDENTS AND NEGLIGENCE.</b>														
Accident . . . . .	30	27	20	5	11	6	15	2	14	2	50	7	27	3
Accident (railroad) . . . . .					3		6	1	2		29	2	20	
Boiler explosion . . . . .									1		1		1	
Burn . . . . .		2	10	11	2	3		1		2		2	2	1
Coal mine . . . . .									1		1		1	
Drowning . . . . .	1		1	1	5	1	9		7	1	8	1	7	
Lightning . . . . .							2	1	1		3	1	2	
Poisons . . . . .	2	2	1			1							2	
Shooting . . . . .							1	1	6		10		1	1
Sunstroke . . . . .													2	
Total . . . . .	33	31	32	17	21	11	33	6	32	5	102	13	65	5
<b>ORDER TWO—HANGING.</b>														
Judicial . . . . .											2			
By a mob . . . . .													1	
Total . . . . .											2		1	
<b>ORDER THREE—HOMICIDE.</b>														
Homicide . . . . .	2								2		6	3	6	
Shooting . . . . .									2			1	3	1
Total . . . . .	2								4		6	4	9	1
<b>ORDER FOUR—SUICIDE.</b>														
Drowning . . . . .										1	1			1
Hanging . . . . .											3		1	2
Poisons . . . . .								1		2	1		4	
Shooting . . . . .									2		5		4	
Suicide . . . . .										1	7	5	4	6
Total . . . . .								1	2	4	17	7	13	10
Total violence . . . . .	35	31	32	17	21	11	33	7	38	9	127	24	88	16
Unknown . . . . .	59	60	21	14	6	5	1	5	3	3	10	13	4	8
<b>RECAPITULATION.</b>														
Zymotic diseases . . . . .	553	468	439	423	166	182	82	79	64	109	152	183	97	118
Constitutional diseases . . . . .	63	52	60	65	23	36	32	53	68	143	278	422	199	250
Local diseases . . . . .	526	394	348	278	127	109	64	88	113	89	202	259	200	242
Developmental diseases . . . . .	215	164	13	18	1			1		11	5	42	6	43
Violence . . . . .	35	31	32	17	21	11	33	7	38	9	127	24	88	16
Unknown . . . . .	59	60	21	14	6	5	1	5	3	3	10	13	4	8
Grand total . . . . .	1451	1169	913	815	344	343	212	233	286	364	774	943	594	677

## C—Continued.

40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 to 100.		Over 100.		Not Rep'd.		Males.	Females.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
24	6	19	8	16	1	11	5	2	4	..	..	..	1	9	1	248	78	326
10	1	3	..	6	..	1	..	1	..	..	..	..	..	8	..	89	3	92
1	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	6	1	7
..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	16	27	43
1	1	1	..	..	..	..	..	..	..	1	..	..	..	..	1	5	..	5
3	1	3	2	3	..	2	..	..	..	..	..	..	..	6	1	52	8	60
1	1	1	..	..	..	..	..	..	..	..	..	..	..	1	..	13	2	15
4	1	2	..	1	..	..	..	..	..	..	..	..	..	..	..	12	4	16
..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	24	2	26
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	3
46	11	34	10	28	1	14	6	3	4	..	1	..	1	25	3	468	125	593
1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	4
2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	4
3	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	8	..	8
1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	18	4	22
..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	6	2	8
1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	1	24	6	30
..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	4	5
2	1	2	..	1	..	..	..	1	..	..	..	..	..	1	..	12	5	17
2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	8	4	12
2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	14	1	15
5	4	6	2	2	1	1	..	..	..	..	..	..	..	2	..	27	19	46
12	7	10	2	3	1	1	1	1	..	..	..	..	..	3	..	62	33	95
62	18	46	12	32	2	15	7	4	4	..	1	..	1	29	4	562	164	736
4	6	7	9	12	5	11	7	4	5	..	..	..	..	27	40	169	180	349
75	75	81	54	72	62	58	48	20	19	..	..	..	..	32	24	1,899	1,844	3,733
134	183	115	144	124	119	86	53	17	19	..	..	..	2	28	32	1,225	1,573	2,798
229	210	300	255	354	286	324	269	136	89	7	8	..	..	45	43	2,975	2,621	5,596
3	15	12	11	16	22	27	88	98	107	22	23	1	1	8	8	487	557	1,044
62	18	46	12	32	2	15	7	4	4	..	1	..	1	29	4	562	164	726
4	6	7	9	12	5	11	7	4	5	..	..	..	..	27	40	169	180	349
507	507	561	485	610	496	579	472	279	243	29	32	1	9	167	151	7,307	6,939	14,246

TABLE D.

*Deaths by Counties.*

COUNTIES.	1885.						1886.												Total.						
	Oct.		Nov.		Dec.		Jan.		Feb.		March.		April.		May.		June.			July.		August.		Sept.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	M.	F.	M.	F.
Adams.....	4	3	2	2	3	8	3	4	3	5	2	2	1	3	1	2	3	1	6	4	6	3	5	5	
Allen.....	35	17	26	17	7	7	12	16	20	31	39	23	23	23	24	23	32	23	40	24	26	1	6	3	
Bartholomew.....	9	8	8	7	2	5	3	11	11	11	21	16	16	14	11	9	9	5	15	14	14	2	24	20	
Benton.....	3	3	2	3	1	3	2	3	3	3	1	3	3	5	1	2	1	3	4	1	3	3	1	8	
Blackford.....	4	2	3	1	..	3	2	3	2	..	..	2	3	1	1	1	..	..	4	1	3	3	1	5	
Boone.....	8	1	2	1	5	4	1	6	9	4	7	6	6	1	5	3	5	3	3	9	6	1	2	4	
Brown.....	2	2	6	8	9	5	6	1	9	2	2	2	17	12	7	9	4	2	9	3	10	2	2	6	
Carroll.....	27	6	6	6	9	6	9	10	6	10	27	11	11	12	7	9	4	9	9	3	10	15	6	5	
Cass.....	10	11	5	6	1	11	6	13	12	7	10	5	9	9	14	9	6	12	11	13	12	17	11	14	
Clark.....	2	..	..	..	..	..	..	6	6	7	10	5	5	12	9	14	6	6	12	15	17	3	5	6	
Clay.....	5	4	7	1	6	7	7	8	8	1	..	3	3	3	2	3	3	1	2	7	9	9	6	8	
Clinton.....	..	..	..	..	..	..	..	2	5	4	2	2	3	3	1	1	4	1	3	1	2	2	2	4	
Crawford.....	..	..	..	..	..	..	..	7	5	4	2	2	11	5	4	8	1	1	3	5	2	6	4	4	
Davies.....	7	3	6	3	4	4	7	5	7	13	8	5	9	9	7	10	8	6	10	9	11	6	5	3	
Dearborn.....	..	..	..	..	..	..	..	6	6	6	4	4	3	3	4	4	3	5	6	5	6	5	3	2	
Decatur.....	8	6	4	6	2	5	3	7	3	7	6	12	7	11	5	4	6	5	5	6	3	10	14	8	
DeKalb.....	7	7	8	8	6	3	6	9	8	3	3	3	4	9	6	3	6	6	5	5	3	8	7	15	
Delaware.....	5	5	7	4	3	10	4	11	6	12	11	11	10	10	7	4	6	8	7	8	8	8	3	8	
Dubois.....	1	5	1	4	3	3	3	5	5	4	6	6	7	7	6	2	3	8	7	15	5	5	3	13	
Elkhart.....	2	1	1	1	2	3	3	13	10	12	10	11	15	16	18	3	8	12	19	17	19	11	13	12	
Fayette.....	..	..	..	..	..	..	..	4	3	3	2	4	3	2	2	1	1	1	4	1	5	3	6	6	
Floyd.....	13	8	6	6	8	9	8	5	10	12	14	8	10	20	6	9	7	2	14	11	7	3	10	218	
Fountain.....	8	11	5	3	6	14	11	9	8	7	8	4	4	6	6	8	3	8	18	11	13	7	20	97	
Franklin.....	2	2	1	1	..	..	..	8	12	7	7	6	4	1	1	1	1	2	13	11	10	2	12	323	
Fulton.....	5	5	3	3	3	3	3	2	3	3	6	5	3	3	4	2	1	2	4	2	3	1	2	30	

Gibson	163	78	85	6	10	8	6	7	9	6	1	8	5	4	5	9	10	6	5	4	3	2	1	163
Grant	79	41	38	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	79	
Greene	125	59	77	11	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	125	
Hamilton	199	97	102	6	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	199	
Hancock	135	77	58	11	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	135	
Harrison	165	88	77	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	165	
Hendricks	174	90	94	9	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	174	
Henry	184	111	73	3	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	184	
Howard	75	45	30	4	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	75	
Huntington	218	102	116	3	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	218	
Jackson	184	95	99	12	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	184	
Jasper	59	27	32	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	59	
Jay	147	64	83	5	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	147	
Jefferson	120	56	64	3	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	120	
Jennings	72	26	46	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	72	
Johnson	168	84	84	16	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	168	
Knox	146	67	79	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	146	
Kosciusko	84	41	43	4	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	84	
Lagrange	67	34	33	4	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	67	
Lake	73	37	36	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	73	
Laporte	263	122	141	12	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	263	
Lawrence	80	43	37	3	20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	80	
Madison	312	143	169	5	23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	312	
Marion	1,776	842	934	83	81	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1,776	
Marshall	73	34	39	4	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	73	
Martin	72	33	39	2	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	72	
Miami	113	58	55	6	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	113	
Monroe	95	47	48	11	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	95	
Montgomery	213	100	113	3	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	213	
Morgan	117	58	59	6	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	117	
Newton	35	19	16	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	35	
Noble	35	19	16	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	35	
Ohio	69	27	42	5	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	69	
Orange	55	21	34	6	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	55	
Owen	70	35	35	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	70	
Parke	86	42	44	3	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	86	
Perry	60	32	28	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	60	
Pike	92	44	48	4	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	92	
Porter	100	55	45	6	12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100	
Posey	211	98	128	3	18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	211	
Pulaski	73	37	36	4	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	73	
Putnam	149	84	65	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	149	
Randolph	216	114	102	11	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	216	

TABLE D—Continued.

COUNTIES.	1885.						1886.												Males.	Females.	Total.							
	Oct.		Nov.		Dec.		Jan.		Feb.		March.		April.		May.		June.					July.		August.		Sept.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				M.	F.	M.	F.	M.	F.	
Ripley	5	4	3	2	1	1	3	5	3	3	8	4	5	6	5	1	7	6	4	3	6	1	3	2	59	52	111	
Rush	7	13	2	2	1	1	6	8	6	6	7	7	5	4	2	2	4	4	4	4	4	4	3	40	54	94		
Scott	1	9	2	1	1	1	12	12	8	8	5	5	11	12	8	8	4	4	4	4	4	4	5	34	29	63		
Shelby	9	6	7	7	1	6	12	12	6	6	6	6	9	12	5	4	4	4	4	4	4	4	10	55	62	117		
Spencer																									69	67	136	
Starke		1																							17	14	31	
Steuben		12		10		9	11	5	7	7	5	5	4	5	3	2	2	4	4	4	4	4	4	2	17	23	40	
St. Joseph	13	11	10	5	4	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	74	72	146	
Sullivan	6	2	5	4	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	4	31	32	63	
Switzerland	1	1																							19	18	37	
Tippecanoe		3	5	4	4	4	8	6	4	4	7	10	6	6	14	12	17	11	9	13	13	17	11	4	95	82	177	
Tipton							2	2	2	2	2	2	2	3	6	2	6	1	4	4	5	6	3	5	50	48	98	
Union		2	1	1	1	1	9	9	3	1	1	1	1	1	2	2	6	3	3	3	3	3	2	2	18	32	50	
Vanderburgh	46	32	33	23	40	21	38	22	33	33	39	4	25	27	20	20	23	18	54	45	57	86	40	40	448	360	808	
Vermillion	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	28	19	47	
Vigo	20	25	15	13	16	13	37	9	23	19	39	23	33	31	19	21	27	25	34	25	36	30	24	22	323	256	579	
Wabash	4	4	3	6	8	3	2	2	2	3	5	5	6	6	3	2	3	2	7	2	5	1	8	5	56	37	93	
Warren	6	2	1	3	3	2	2	1	3	2	3	6	9	9	6	3	2	2	3	2	3	2	2	6	40	33	73	
Warrick	4	4	4	6	6	7	3	10	5	1	5	5	6	6	6	5	7	5	4	3	2	3	8	5	64	55	119	
Washington	20	20	1	1	1	1	4	4	1	1	4	4	10	4	3	3	2	2	7	2	3	3	3	3	1	52	52	104
Wayne	21	19	16	20	19	25	13	19	15	28	24	23	12	17	11	18	16	11	22	19	20	25	35	209	259	468		
Wells	3	5	2	2	3	3	5	4	3	4	4	4	4	4	3	3	3	4	5	2	2	4	2	2	43	38	81	
White	6	6	2	2	3	3	5	6	6	7	9	5	5	4	4	2	2	2	3	2	8	8	1	1	44	42	86	
Whitley	10		5	5	2		5	3	2	6	1	3	7	6	2	2	4	5	9	5	2	3	4	1	48	37	85	
Total	716	606	510	400	430	454	653	592	555	592	740	674	690	698	480	499	520	489	712	648	720	642	653	656	7,369	6,960	14,319	



## ZYMOTIC DISEASES.

The total number of deaths registered within the year, from all causes, is 15,223. Of this number the zymotic diseases caused 3,733 deaths. In 1882, for nine months, the number of deaths caused by this class of diseases is 3,200; in 1883, 3,835; in 1884, 3,950, and 1885, 4,375. The number of deaths from this disease, therefore, within the year is 103 less than for any year since the organization of the Board of Health. The mortality from zymotic diseases for the past year shows a decreased per cent. from this class when compared with former years. The reason for this decreased mortality, in our judgment, is undoubtedly due to the improved sanitary condition of the State, which has been brought about by the uniform efforts put forth by the State and Local Boards of Health, and the harmonious manner in which all have worked to accomplish one purpose, viz., *the prevention of disease*, and an improved hygienic condition of the State. It is a well-known fact to sanitarians and medical men that unsanitary surroundings not only tend to originate and develop, but to spread, all the diseases classed under the head of the zymotic.

Below we present a comparative statement showing the per cent. of mortality during the past four years from nine principal zymotic diseases.

DISEASES.	1883.		1884.		1885.		1886.	
	Per Cent. of Mortality to Zymotic Diseases.	Per Cent. to Total Mortality.	Per Cent. of Mortality to Zymotic Diseases.	Per Cent. to Total Mortality.	Per Cent. of Mortality to Zymotic Diseases.	Per Cent. to Total Mortality.	Per Cent. of Mortality to Zymotic Diseases.	Per Cent. to Total Mortality.
Cholera infantum. . . . .	13.55	3.49	16.48	4.14	14.33	3.77	14.3	3.7
Croup. . . . .	5.26	1.35	4.68	1.17	6.19	1.62	5.7	1.4
Diphtheria. . . . .	8.05	2.07	6.05	1.52	9.39	2.47	10.	2.7
Dysentery. . . . .	4.14	1.06	5.62	1.41	5.46	1.43	4.2	1.1
Fever, malarial. . . . .	9.54	2.36	7.49	1.88	6.76	1.78	3.	1.7
Fever, scarlet. . . . .	2.97	.76	4.5	1.13	4.45	1.17	7.2	1.1
Fever, typhoid. . . . .	16.01	4.11	15.08	3.79	17.09	4.5	16.	4.1
Fever, typho malarial. . . . .	2.89	.74	3.97	1.	4.02	1.05	3.5	.7
Small-pox. . . . .	5.55	1.42	2.53	.63	.27	.07	Only 1	death.

## MALARIAL FEVERS.

In this group are included bilious, catarrhal, congestive, intermittent, pernicious, remittent and malarial fever. The total number of deaths reported from these is 222, a decrease from

the previous year of 206. The months having the greatest number of deaths from these diseases are August, September and October. Those having the least number are November, January and February.

The number of deaths from these febrile disturbances is gradually growing less. The cause of this is doubtless due to the extensive drainage of swamps and marshes, and the vast amount of underground tile drainage which has been done within a few years, and the more extensive cultivation of our land.

#### DIARRHEAL DISEASES.

In this class of diseases we have placed cholera infantum, cholera morbus, diarrhea, dysentery and entero-colitis. Cholera infantum caused the largest number of deaths, 534, and cholera morbus the smallest number, 35. The greatest number of deaths from this group of diseases occurred in the months of July, August and September. Unsanitary surroundings, depressing influences of warm weather, want of cleanliness and the eating of tainted and unwholesome food are the principal causes which develop this class of enteric diseases. Strict sanitation and obedience to hygienic laws are the measures to be observed in lessening their prevalence and mortality.

#### ACUTE LUNG DISEASE.

In this group are placed bronchitis, congestion, pleurisy and pneumonitis. The total number of deaths from this class was 1,348. The greatest number, 691 deaths, occurred in the months of February, March and April. The least number, which was 147, occurred in the months of June, July and August.

#### CHOLERA INFANTUM.

The whole number of deaths registered from this disease within the year was 534, a decrease of 93, when compared with the previous year; 82.02 per cent. of the whole number died within the months of July, August and September; 398 were under one year of age.

This great mortality among nursing children would seem to reflect severely upon the intelligence of the mothers of our State, as it is either through ignorance or negligence that so

many are allowed to pass into an untimely grave from a disease whose mortality might be materially reduced by the observance of some well established hygienic laws. Improper feeding is the direct cause of a large proportion of cases. Unsanitary surroundings, such as bad location of dwellings, poorly heated and ventilated, and the depressing influence of warm weather have a deleterious effect upon the young, and not unfrequently cause the disease. It is a well-known fact that many mothers do not know how to wash, clothe or feed their infants, and apparently do not desire to acquire such knowledge. It is a pity that women should be blessed with children who are unwilling to comply with all of the demands which such a relationship requires of them, many preferring to obey the calls of society rather than to properly care for those who are dependent upon them, and who, if cared for, might live to be the comfort of their old age. In this progressive period too many mothers look upon it as beneath their dignity to nurse their children, and believe that the little ones in drawing the life fluid from nature's fountains, whence God intended that they should derive nourishment during their first years of life, would destroy the rotundity of these organs and render them unshapely; therefore the poor helpless infant in the morning of life is turned over to the tender mercies of a nurse, who can only have a mercenary interest in its welfare. If it be a wet nurse it is more than probable that no effort has been made to discover hereditary tendencies; her system may be saturated with the germs of consumption, scrofula, or syphilis, and not a question has been asked regarding her previous history, and no effort has been made to determine whether she be healthy or otherwise. If the child is not nourished through the agency of a wet nurse, it is more than probable that it is fed with milk from a cow with tubercle, cancer or some other equally fatal disease, or else upon some of the numerous patent infant foods "sold by all druggists," or given food only fit for the stomach of an adult. Mothers should always nurse their babes unless physically incapacitated. All substitutes are abominations when compared with the mother's milk. The clothing and cleanliness of children should be carefully watched. Infants should be clad in keeping with the weather and be taken out into the sunlight and fresh air to develop their growth. We have only enumerated a few of the causes

which lead to the development of this very destructive disease which annually carries so many human beings to an untimely grave. We suggest that the mothers of our State carefully study the following rules for the care of infants during the first year of life, taken from an article written by Dr. W. A. Fritsch and published in our last annual report.

1. Mother's milk is the best nourishment for the new-born child, and can not be replaced by any other. It is, therefore, an unquestionable duty for every mother to give the breast to her baby if possible. Infants who take their mother's breast, grow quickest, develop best, and die most seldom. Nursing should be commenced within a few hours after delivery, and be kept up in a certain order—in the first fourteen days, every two hours; later on, every three hours until the first teeth make their appearance, or at least until the child is six months old. The weaning must be gradual and not before the baby has taken other nourishment along with the mother's milk. If the milk of the mother (or the wet nurse) is not sufficient for the support of the child, recourse has to be taken to artificial food, besides the mother's breast, as specified below.

2. If the mother can not give the breast to her baby, and the next best, the milk of a good wet nurse can not be procured, then the baby should receive from the first until the third month, inclusive, only this nourishment. Sweet milk from a cow, boiled and mixed with barley water, through which the strong coagulation in the stomach is prevented. This mixture is to be given lukewarm during the day, not oftener than every two hours, and two or three times during the night.

3. Barley water is prepared by boiling a teaspoonful of powdered barley (ground in a coffee mill) with a gill of water, for fifteen minutes, and then straining it. Add to this a little cooking salt and one lump of white sugar. Every day and every night the barley water must be prepared anew and kept in a cool place.

4. As soon as the milk for the baby is received, it should be boiled, put in a clean vessel, which is closed with a cover, or in a bottle closed with a stopper, and kept in a cool place. If this is neglected it may become sour and unfit for use. For infants with constipated bowels, the milk should not be mixed with barley water, but with oat gruel. In diarrhea, especially during the summer months, as little milk as possible should be given,

or one to two days only barley water, and the physician to be called immediately.

5. In the first and second months of the infant's life, two parts of barley water to one part of cow's milk are used. In the third and fourth month, equal parts of barley water and cow's milk are given. In the fifth and sixth months, two parts of cow's milk are mixed with one part of barley water. If the baby is seven months old, pure milk may be given. During the first month of the infant's life, about one pint of cow's milk, diluted with barley water, is used per day, and the quantity is gradually increased as the baby continues to grow, until one quart or more is daily used. This quantity is needed from the fourth month on.

6. It is not necessary to take the milk always from one cow. On the contrary, the same should be changed immediately if the infant, notwithstanding the milk is diluted with barley water in the right proportion, and given in the right quantity, does not prosper.

7. Give the prepared milk in a nursing bottle covered with a nipple, which should be put in fresh water always after feeding, and cleansed very thoroughly. Nursing bottles with sucking tubes of glass and India rubber, are not suitable, because it is very difficult to clean them. If the contents of the nursing bottle are not all taken by the baby, the rest must not be taken for the next meal. As soon as the infant is fed the bottle must be cleaned, and filled with pure water until it is used again.

8. The feeding of infants during the first few months with pap and butter soup, as is done by many, is entirely unsuitable and dangerous, for this reason: The stomach and intestinal canal of the infant does not secrete that intestinal juice, which is so necessary to the digestion of flour and bread. Such nourishments pass, therefore, for the greatest part, unutilized through the intestinal canal, generate sour fermentation, with much flatulence diarrhea, tympanites and all the evil sequels connected therewith (especially great restlessness of the infants) and bring about a large abdomen, while the other parts of the body (for deficiency of good, nutritious matter) remain small and feeble; or in other, but rare cases, the nourishments make fat and corpulent, but never strong. Infants fed in such a way are, when they become sick through external influences, always in the greatest danger, and become oftener victims to dis-

ease than those infants which have been nourished in the proper way.

9. When the infant is four months old, then with the milk, which is yet the principal nourishment, soups made from crackers, bread, farina, wheat or rice flour, milk or thin beef, should be given.

10. Only when the infants have all their teeth can they take part in eating with the grown people from their table.

11. The practice of giving the baby something in the mouth to suckle on, for the purpose of making it quiet, is unhealthy, and should be abandoned.

12. The infant should, as often as possible (in winter, too, when the weather is mild), be carried in the open air; and should be bathed during the first three months of its life five minutes daily; later on, two or three times each week in warm water, 98° Fahrenheit (27° R.). The room where the infant stays must be ventilated frequently.

Mothers use for their infants a great many artificial food preparations, patented and not patented articles, of which we know very little.

The above simple prescriptions are easily carried out. Milk, barley and the other articles are in good quality, for sale everywhere. The mothers may know what they give to their babies, and may easily regulate the diet of their infants by following the rules above enumerated.

#### CROUP.

For the last year the number of deaths reported from this disease was 214, a decrease of 57 when compared with last year. There were 135 males and 79 females; 207 were white and 7 colored. Its greatest mortality was during the months of October, November and December. Nearly one-half the deaths from this disease occurred during these three months. It will be seen, by a study of Table No. 1, that true or membranous croup and diphtheria maintain a remarkably close relation in the increased and decreased mortality of each; 44.64 per cent. of the deaths caused by the latter disease occurred in the months of September, October and November. The facts would seem to sustain the theory advanced by many that they are one and the same disease, and that the same sanitary precautions should be practiced in the treatment of both.

## DIPHTHERIA.

We do not give the number of cases reported for the reason that we are convinced, after reviewing the reports received from health officers, as well as by knowledge obtained through the medium of personal examination of individuals said to be affected, that many cases are reported as diphtheria which, in fact, are follicular pharyngitis, or common ulcerated sore throat. Such reports are made by certain physicians, either through ignorance or for the purpose of deceiving the public, and making the people believe that when this terrible disease is in their midst they need have no fear, provided the proper doctor is called in time.

By referring to the figures in Table No. 1 it will be seen that there were 392 deaths reported from this disease within the year; also, that 354 of the total mortality were under ten years of age, showing that children are particularly susceptible to the influence of the specific poison of the disease. However, a glance at the same table shows that the aged are not exempt, as a death is reported from the disease of a person who was over eighty years of age.

It is acknowledged by the profession to be an epidemic disease, both contagious and infectious, with a material cause as yet not clearly defined and known only by its effects.

"Science has to mourn the loss of a series of excellent physicians and observers who fell victims to diphtheria while in the line of duty.

"The numerous cases of infection of persons who have been in the same room with diphtheritic patients without coming in their immediate vicinity prove that the air exhaled by the patient, which does not contain shreds of exudation or tissue, is a vehicle for the contagion."

It is not clear that the greater frequency of the disease among children than adults is due to a greater susceptibility of the former, but rather on account of their greater exposure. Ever since Bretonneau, in 1821, clearly defined the character of the affliction observers have been experimenting and endeavoring to discover the true cause of the disease, and the result of recent investigations tends to prove the view that it is a specific disease caused by specific organisms (micrococci). Whether

these organisms are the true source and origin of the disease remains to be demonstrated.

It is known that moisture aids its spread and increases its malignancy, prevailing more frequently and with greater fatality in neighborhoods that are damp and chilly, its dissemination being aided by filthy water and contaminated air. Its propagation depends largely upon local unsanitary conditions and surroundings, such as poor ventilation, crowd poison, defective sewerage and the presence of decaying animal and vegetable matter, its spread and destructiveness being increased by the same. Each case is an infectious center from which the disease may spread. Physicians, parents and all others should recognize this fact and make use of all available means, such as isolation and thorough disinfection, to prevent its spread.

Reports received from correspondents throughout the State show that the greatest number of deaths occurred in thickly populated localities. As the emanations from the body of a person who has died from this malady are exceedingly poisonous and dangerous, the funeral should be strictly private, and under no circumstance should a public one be tolerated.

Health officers have been instructed to see that the requirements of Rule 12 of the Rules and Regulations of the State Board are strictly enforced in reference to the burial of persons who have died from any disease dangerous to the public health.

In regard to instructions for the prevention of the spread of diphtheria we refer the reader to the revised preventable disease circular published in another part of this report.

#### SCARLET FEVER.

The total number of deaths reported from this disease within the year is 269, an increase of 74 over the previous year. We hope that the people will soon learn that scarlet fever, scarlatina, scarlet rash and canker rash are several names for the same disease, and also that the mildest case can communicate the disease in its severest form. The name scarlet fever is the one that should be used, as so many names for a disease tends to confusion. Considering the increase in our population and the many outbreaks in different parts of the State, together with the fact that the reports of contagious and infectious diseases are more complete than ever before, the mortality has



been small. It is gratifying to be able to say that the health officers in the several outbreaks which have occurred in different sections of the State have been prompt in the use of preventive measures, such as isolation and the use of disinfectants. The strict observance of these precautions restricted the spread of the disease and saved many lives. An outbreak of the disease occurred in one of the benevolent institutions of the State, where there are over three hundred inmates ranging in ages from seven to twenty-one years. It was confined to two cases by use of the means mentioned above.

#### TYPHOID FEVER.

Our reports show 599 deaths from this disease within the year, a decrease in its mortality from last year of 149. It is a specific zymotic disease, infectious and insidious in its nature, with a specific poison contained in the discharges of the afflicted, and by air or water may be introduced into the system of a healthy individual, where it will reproduce the same disease. The cause of its presence in a household should be determined by a careful investigation of the sanitary surroundings. As the disease depends upon a specific virus which may emanate from sewers, drains, cesspools, water closets and privies, each, when suspected, should be thoroughly examined. If there is any contamination of the soil by leakage from sewers, cesspools or privies, it should be immediately corrected. Water being the most frequent medium by which the germs of the disease are introduced into the system, its supply should receive careful attention, and if found polluted should be at once abandoned. As the excremental discharges contain the specific poison of the disease, they should be thoroughly disinfected as soon as passed from the body.

#### SMALL-POX.

We are pleased to be able to say that there were only three cases of small-pox in the State within the year—one in Rush County and two in Hancock. One case in the latter county proved fatal.

The unremitting attention and executive ability of the health officers of these counties undoubtedly prevented a spread of the disease, thereby saving many lives. There is no doubt if vac-

cinnation of all exposed persons had not been systematically enforced the disease would have decimated these counties and extended into those adjoining. The afflicted, and those in charge, were kept in close quarantine. There is no question but that vaccination and revaccination is a complete protection against the disease. We believe vaccination should be universal, and in order to be so it should be made compulsory. In regard to the kind of virus that should be used in making vaccination, we refer to the following rule adopted by this Board:

"All vaccinations must be with *non-humanized virus*. But no such virus shall be bought or sold to be used by physicians in vaccinating except such virus has been taken from the original package as obtained from the producer of said virus, and such original package of one point or more, of one scab or more, shall be bought and sold in sealed envelopes, having on such envelopes the name of the proprietor of the farm where the virus is produced, and also the date when such virus was taken from the cow."

The only exception to this rule that would be recognized by this Board would be in the event that small-pox was prevalent in epidemic form and the health officers should certify to the impossibility of obtaining such virus in sufficient quantity, and also as to the purity of the humanized virus to be used in lieu of the bovine virus. Provision should be made for an epidemic fund, to be under the control of the Governor, to be used whenever, in his judgment, our State is threatened with an invasion of this or any other pestilential disease.

## LETTERS FROM COUNTY HEALTH OFFICERS.

## BARTHOLOMEW COUNTY.

COLUMBUS, IND., October 31, 1886.

It is not claimed that the following is a complete description of the sanitary condition of Bartholomew County, as no such description could possibly be given of this or any other county in the State, unless the writer should first visit every school district, if not every land section, and make a critical observation of the unsanitary conditions, whether natural or artificial. In this way he would be enabled to point out all unsanitary conditions which, in his judgment, were the producing cause of diseases. However, it may be truthfully said that the natural sanitary condition of this county is perhaps as good as that of any other county in the State. It has the advantage of good natural drainage, being divided nearly centrally from north to south by the Driftwood Fork of White River. The east half is tolerably well drained by the following streams: Flatrock, a large creek which enters the county near the northeast corner and mouths just above Columbus; Haw Creek, Clifty, Duck Creek which empties into Clifty, Brush Creek and Little Sand Creek, all of which flow in a southwesterly direction and discharge their waters into Driftwood. These streams, scattered widely as they are, afford most excellent natural drainage, and with the artificial means now largely used by the industrious farmer, are outlets for a most perfect system of drainage for that section of country. About one-half of the land east of Driftwood is clay. This clay land forms the eastern boundary of the county, and much of it is called slash. The soil is composed of a black sandy clay muck, resting on a clay sub-soil, all of which is underlayed by limestone, and being quite productive is very extensively drained. Along the east bank of Driftwood the land is a black sandy loam and rests on a sand sub-soil, and being quite porous all surface water rapidly sinks, so that there are no bayous or ponds to speak of until near the mouth of Little Sand Creek. Here are found several which hold water generally throughout the summer season. All through this section the water is quite near the surface. The west half of the county is more broken and hilly, and is drained by the following streams: Big and Little Nineveh creeks which run through the northwestern portion of the county in a southeasterly course until they empty into Driftwood, just above a point well known as Tannehill's Mills (now Drybread's); further south Guthrie's Creek, Catherine's Creek, Wolf Creek, Denois Creek, Possum Creek, and at the extreme south, White Creek. The bottoms on the west side of Driftwood are narrow, and nearly all the west half of the country is clay land which is underlayed by blue slate and soft sandstone. The southwest quarter of the county is generally white oak flats, with a tough, non-porous, rather white clay soil, which holds all surface water and forms White Creek slashes, and in the neighborhood of Jonesville there are several sloughs or bayous. Consequently in this, the southwest part of the county, we usually have the greatest amount of what are generally called malarial diseases, produced, no doubt, by the watery vapor raised by evaporation from these ponds and slash lands. The same form of sickness is found in the neighborhood of the bayous above spoken of near the mouth of Little Sand Creek. For the year ending September 30, 1886, there were reported to the Secre-

tary of the Board of Health, of Bartholomew County, thirteen deaths from typhoid fever, all of which occurred in the east half of the county, except one which occurred in the southwest quarter of the county, and was reported as malignant, but no cause of the attack was reported, nor was there any spread of the disease in that section. Of the twelve cases reported from the east half of the county, there were three cases and three deaths in one family near Hartsville, but no cause was discovered for the outbreak; there were two cases and two deaths in one family near Hope, but, as before, no cause was given for the production of the disease, nor was there any spread to others from any of the patients reported. In addition to these were reported three cases of diphtheria, and three deaths; two of these were in one family in Hartsville, from which there was no spread, and the other was some five or six miles northwest of Hartsville, with no spread to others, nor was there any cause assigned for the outbreak. All of which leaves the public to suppose that the outbreak of both typhoid fever and diphtheria was due to spontaneity, or that it occurs sporadically, and if not to these it must have been due to water pollution, and if to this cause those persons who were attacked must have been predisposed to said diseases by hereditary or acquired weaknesses, for most certainly other persons must have drunk water from the same supply at or about the same time. For the same year there were reported thirteen cases of scarlatina, with four deaths, and all of these took place in the east half of the county, and in none of the cases was the origin reported nor could it be traced to any satisfactory causes nor did it spread as epidemics of scarlatina formerly did. Three of these cases occurred in one family where there were but three children, all of which died, and which was reported as malignant, but there was no spread; consequently we must conclude it was sporadic as there were cases that occurred in families of several children where no effort was made to isolate the sick child, and yet there was no spread to the other children, nor was there any sequella observed in any of the cases so far as reports show or inquiry elicit.

J. S. ARWINE,

*Secretary Board of Health, Bartholomew County.*

## BENTON COUNTY.

*To the State Board of Health:*

On the twenty-second day of October, 1886, I made an inspection of the Benton County Asylum for the Poor. My visit was entirely unannounced and unexpected; consequently I found all in everyday attire, which was positively good. The farm is well located, with a substantial brick dwelling of two stories and a-half, containing sixteen rooms, used as the home for Superintendent and inmates. I found everything scrupulously clean from cellar to attic. The sleeping-rooms are small but well ventilated. Upon conversing with the inmates I found them happy and contented, clean and well fed. Being ushered into their dining-room at the noon hour, I can testify to the above facts. The cellar is well stored with supplies for winter.

The yard and surroundings are in perfect keeping. The outbuildings are unpretentious but in good condition. The Superintendent and Matron seem to be the right persons in the right place. I have no criticism to offer in reference to the

management, but would make the following suggestions : More bedrooms, a dining-room and bath rooms are needed, with good sewerage.

With these improvements Benton County could point with great pride to her Home for the Poor.

Respectfully submitted.

SAMUEL R. SEAWRIGHT.

## BOONE COUNTY.

Boone County is in a very good sanitary condition, not having had an epidemic in any of the contagious and infectious diseases—small-pox, diphtheria, scarlet fever and typhoid fever. Yet we have had a few cases of all these except small-pox. There has not been a case of this disease in the county within the year. Boone County is becoming healthier each year. The physicians would testify to this if we had no record of the fact. We attribute this fact to the amount of tiling in the county. Tiling has served as a twofold purpose, to make soil productive and as a sanitary measure. Of the last I shall speak.

It has only been a few years since this county was known as the mossback and webfoot. To the most of us it has a significant meaning. Almost the entire county was devastated by water, and the croak of the frog in his cesspool of slime and malaria was heard on every hand. To-day the ax, spade and plowshare have changed this county from a wilderness to a county that boasts of the finest land, and one of the healthiest counties in the State.

I do not believe the condition of the soil in Boone County is productive of typhoid fever, because the soil is deep and loose, with a clay subsoil which makes a good filter for the heavy rainfalls. A genuine case of ague of ten years' ago is almost unheard of now. I have treated one case of chills in the last year; others testify to the same. I will give the number of cases reported September 30, 1886, of each of the following diseases :

Typhoid fever. . . . .	36
Scarlet fever . . . . .	45
Diphtheria . . . . .	17

In 36 cases of typhoid fever four died; scarlet fever, 45 cases, four died; in diphtheria no deaths reported.

Dr. Smith reported to the Boone County Society one case of typhoid fever occurring in a family which was caused by the man sleeping on a carpet which had previously been used in a room where there had been typhoid fever. The carpet had been taken up and aired, then, as a means of economy, was put down again, with the above results.

I have sent out health circulars all over the county for the prevention of diseases.

I am inclined to think that some physicians report diphtheria and scarlet fever that is something else, that they may be called successful physicians in the treatment of these diseases.

Thorntown was the seat of scarlet fever last winter, but under the strict rules of the State Board of Health, executed by the efficient health officer, Dr. Jos. K.

Hawk, there were only a few cases. That town is in a good sanitary condition at the present time. Lebanon reported a few cases of scarlet and typhoid fever. The health board has done a good work there, and yet there is a good deal more to be done. The county jail is not well ventilated; the water closet and vault are in a bad condition. The sewer running from the vault of the jail to Prairie Creek is very dangerous to the citizens along that line, as it was built with common ten-inch tiling, which allows the sewer gases to escape along its course. It also finds its way into the cellars of the jail, and through this the atmosphere of the whole building becomes impregnated with sewer gases, which is a good breeder for diphtheria. The county commissioners are not skilled sanitarians, and the most of their advice comes from the county attorney, who acknowledged that he had never read the rules and regulations of the State Board of Health or the law governing them. They should employ a good sanitary engineer to advise them. The southwest portion of the jail is also in a bad state for want of proper sewerage. Pools of water standing to be drained by the surrounding wells, which they will do where there is no surface drainage. A well will drain an area with a diameter equal to twice its depth, so there is great danger of an epidemic of typhoid fever by drinking poisonous water.

I am of the impression that the waste pipes at the back part of the J. M. Powell's residence at Lebanon have had something to do with the serious sickness he has been having. The foul gases are continually poisoning the atmosphere of his house. These pipes should have traps to prevent the escape of sewer gases. The city council and city board of health should look after this at once.

The poor farm is in excellent condition. The house is a brick building with thirty rooms, large, well ventilated and clean. Well in good condition, grounds clean, supplies ample, cooking good, table equal to or better than the average householder and among the best kept in the State. Fifty-three inmates, thirty males, twenty-three females.

There has been some hog cholera this fall. I had the dead hogs burned where it was possible to do so. There have been seven cases of trichinosis reported in this county this year. Three well marked; the rest were not so well marked. All in same family and all recovered. I could trace to nothing but half-cooked chicken they had been eating.

The school houses are in very good condition as far as I have heard from, but it is hard to reach the trustees. I do not believe more than one-fourth of them realize the duty they owe their constituents, especially to the health of the children. I am glad to say that some of them went to work and had all the wells in their townships cleaned out and other necessary improvements attended to. The school teacher can do much to raise the standard of health. Dr. J. C. Brown says "education and practical medicine have the same aim. The true conception is, that it consists in the harmonious performances of all the functions of the being from the lowest plant to the highest animal. We unhesitatingly assume the health of a being as the most perfect manifestation of its life and to secure this most perfect manifestation of vitality is alike the object of the school teacher and the physician. The school teacher may be the physician's best ally by training the intelligence to the best conditions of health and inculcating those principles of personal and social ethics from the neglect of which disease and death so often arise. And the physician may aid the school teacher in his task by teaching the laws under which the union of conscience, intelligence and the bodily frames maintained and a condition under which the capacities and faculties of the mind may be most successfully worked and strengthened."

Then it is the duty of the people to elect a man to the office of trustee that is qualified to fill the office not only to look after the finances but the health and comfort of the children, because he has the selection of the teacher and a first-class teacher will look after the health and comfort of his pupils. It has only been about four years since a foul well in Jackson Township, this county, at one of the school houses, caused diphtheria and the death of several of the children in the neighborhood.

The teacher, D. H. Heckerthorn, a very efficient one, examined the water and found it in a bad condition. There the trustee failed to do his duty in not looking after cleaning the well out. I believe that Township Trustees should be held responsible for the sickness caused by their neglect.

W. S. HEADY, M. D.,  
*Secretary Boone County Board of Health.*

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#### CASS COUNTY.

LOGANSPORT, IND., October 31, 1886.

*Dr. Metcalf:*

DEAR SIR—In summing up the returns and deaths from our recent epidemics, diphtheria and scarlet fever, I find that without an exception scarcely, where there occurred several deaths in the same family, the disease could be traced to a local cause. Diphtheria has been in the past year unusually prevalent, and closely confined to the city limits, with the exception of Tipton, Clinton, Miami and Washington townships, and the cases so few in those townships it could scarcely be called an epidemic.

Dr. J. H. Talbott, our efficient city health officer, makes the following return for the year ending September 30, 1886:

In the month of October, 1885, six cases of diphtheria were reported to the Board of Health, with six deaths; in November three cases reported with three deaths, all diphtheria; in December there were eight cases of diphtheria and one case of scarlet fever, with two deaths from diphtheria; in April, 1886, one case of scarlet fever and one death; in May three cases of scarlet fever and no deaths; in June six cases of scarlet fever and two cases of diphtheria, with two deaths from scarlet fever and two deaths from diphtheria; in July fifteen cases of scarlet fever and ten cases of diphtheria, with two deaths from scarlet fever and two deaths from diphtheria; in August two cases of scarlet fever and fifty-four cases of diphtheria, with two deaths from scarlet fever and twenty deaths from diphtheria; in September two cases of scarlet fever and seventy-six cases of diphtheria, with fourteen deaths from diphtheria.

Total number of cases of scarlet fever reported during the year, 29; total number of deaths from scarlet fever during the year, 7.

Total number of cases of diphtheria reported during the year, 159; total number of deaths from diphtheria during the year, 49.

The Board of Health has used all means in their power to put the city in a good sanitary condition and disinfect infected districts, and to this end the City Council passed an ordinance giving the Board of Health power to appoint an extra health officer for each ward, and a systematic inspection and cleaning of streets, alleys and premises, with disinfection of same. The work was pushed forward until the

city was thoroughly cleaned. Whether these measures were the cause of the abatement of these contagious diseases or not, I can not say, but both scarlet fever and diphtheria began rapidly to disappear after the city had been cleaned. It is impossible for me to state how many families had more than one case or death from diphtheria. Many families lost from two to four children, and the disease seemed to affect the whole family. As soon as cases were reported, the Board of Health caused the house to be placarded, and leave preventable disease circular; also to examine premises and see that everything was cleaned and disinfected. Where it was possible to isolate cases it was done, and we believe that it was followed with success in saving lives. All funerals were strictly private, the coffins securely closed and not again opened.

Respectfully,

J. W. IRONS,  
*Secretary County Board of Health, Logansport, Ind.*

#### DELAWARE COUNTY.

MUNCIE, IND., Oct. 28, 1886.

At the beginning of the statistical year, October 1, 1885, scarlet fever existed in this ( Delaware) county, and continued until the first of May, 1886. During this time there were reported to this office 146 cases of the disease, of which number five terminated fatally. It will be observed from the proportion of deaths to the whole number of cases, that the epidemic was mild in character. Of the five deaths, one resulted from "nephritis," on the eighteenth day, from the result of exposure, and one from "membranous laryngitis," on the sixteenth day. The other three died on the fifth day, the report not stating the immediate cause of death. All the rules relating to contagious diseases were enforced and the "Preventable Disease Circulars" were distributed in families where the disease occurred. Pupils who suffered an attack of scarlet fever were excluded from school, together with members of the same family not afflicted, and not readmitted except by the certificate of the attending physician that all danger of communicating the disease had passed.

The disease continued until an order was issued fixing the time for admission to school after an attack of scarlet fever, as well as diphtheria, at forty days from the date of the beginning of the attack, after which, not a single case occurred in this city where the disease then existed. Previous to the issuing of this order we found that children were admitted on the certificate of physicians as early as the eighteenth day from the beginning of the attack.

This early admission of children to school after having had scarlet fever, was reckless to say the least. Would it not be well for the State Board to fix the time by a rule for the readmission to school in each of the contagious diseases.

The cases of diphtheria were sporadic, and in the great majority, mild in character indeed. In one case reported, so mild was the attack that the subject was able to play in the yard on the third day. Two deaths resulted from the 29 cases reported. In one case terminating fatally, the sanitary condition of the building and surroundings was very bad. This building, a large hotel of this city, had a cellar under the whole of it. There was no drainage whatever, and heavy rains had raised the water level in the earth to the level of the gutter at the side



of the street, and filled the cellar, well and privy vault, only a few feet apart, so that the water in each was virtually the same. This child died on the third day.

An epidemic of measles, confined almost exclusively to the city of Muncie, began on the 12th day of May and continued until the 20th of July. There were 76 cases reported in all, with no deaths occurring as a result of the disease.

During the year 23 cases of typhoid fever have been reported, with three deaths. In January a family consisting of five members all had the fever, and one of the number died. During August and September, of two families, one of eight and the other of thirteen members, six of each family had typhoid fever. It is the report of the attending physicians that they will all recover. In each of these three instances the cause of the outbreak is reported as being "impure drinking water." The other six cases reported occurred a single case in a family. There was no post mortem in the fatal cases.

In Delaware County two rapidly flowing rivers, the Mississinewa and the White, besides a number of smaller streams as tributaries, carry off the surface water. Artificial drainage has been largely employed, and ditches, open and tiled, drain the land away from these streams, rendering Delaware a fine agricultural county. Artificial drainage has very materially reduced the miasmatic diseases prevailing here fifteen to twenty years ago. Remittent and intermittent fevers were the prevalent diseases of the county before this drainage was practiced. At this time a well defined ague is rarely seen.

Of the one hundred and twenty-four school houses of the county, outside of the city of Muncie, all but nine are brick and of recent erection.

Teachers and school officials are generally awakening to the importance of protecting the health of the pupils of the public schools, and the last two years have made many improvements in the sanitary condition of the school houses and surroundings. It can be said generally that the improvement has been as great as could reasonably be expected. Many new buildings have been erected, and in each instance have been fenced in, a well dug, and separate privies for the sexes provided. These improvements have been made to nearly all the school buildings of the county, the exceptions being those in which a new building and a change of location is contemplated in the near future. Our County Superintendant has rendered efficient service in promoting the sanitary interests of the schools of the county, and many improvements have been made through his suggestion. Of the condition of the schools of this city, it need only be said that their condition is good.

The local Board is composed of intelligent and energetic physicians, and their efforts to promote the sanitary welfare of the city schools have been heartily seconded by the Superintendent and his efficient corps of teachers.

A. B. BRADBURY, M. D.,  
*County Health Officer.*

## FRANKLIN COUNTY.

BROOKVILLE, IND., November 8, 1886.

*C. N. Metcalf, M. D., Indianapolis:*

DEAR SIR—In reply to your circular in reference to diseases and sanitary conditions of this (Franklin) county: There have only been some seven or eight cases of typhoid fever. There were five cases in one family of eight members, and the five that had the disease died. The doctors that had the cases in charge did not report the cases at the time of the sickness. The family was German. They lived in a two-story brick house. The neighbors say the cellar is very wet, and water stands on the floor a good part of the year. It is so damp that the cellar walls are covered with a heavy mold. There have been a few cases of diphtheria. It was not of a very severe type. There have only been two or three deaths. There have been a few cases of measles. No deaths. There have been several cases of scarlet fever, with a few deaths. This, like diphtheria, was not of a severe type. The sanitary condition of the town of Brookville and the county is good. The County Jail and Poor Asylum are in as good a sanitary condition as they can be in under the surrounding circumstances which exist.

GEORGE B. BUCKINGHAM,  
*Secretary Franklin County Board of Health.*

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## HENRY COUNTY.

NEW CASTLE, IND., October 31, 1886.

*Dr. C. N. Metcalf, Secretary of State Board of Health of Indiana, Indianapolis, Ind.:*

DEAR SIR—I am much pleased to report that during the last year the health of Henry County in general has been good.

There were some sporadic cases of diphtheria reported, none proving fatal; but whether the diagnosis was correct in the cases is a question.

Also, some cases of scarlatina, but with prompt precautionary measures the progress and spread of the disease was arrested.

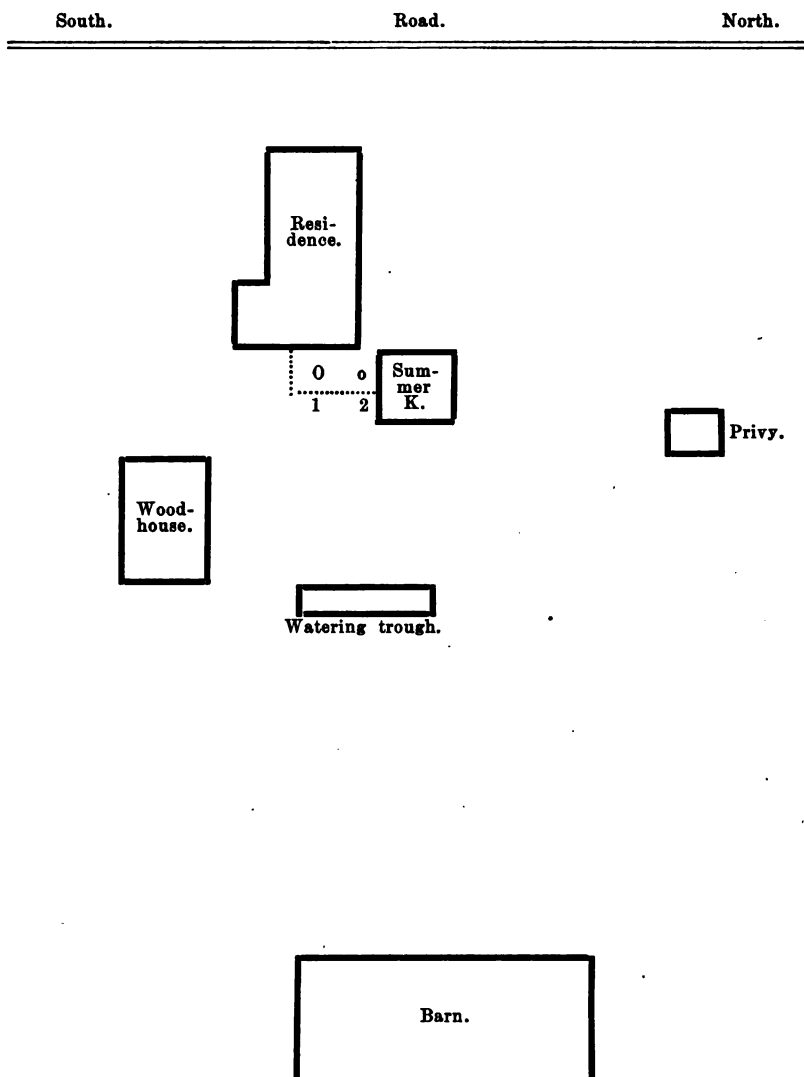
Typhoid fever was developed in a family of eight persons eight miles south-east of this place.

I will give you as briefly as possible a detailed account of the cases as furnished me by Dr. Day, of Dublin, attending physician.

The family consisted of eight persons. Seven were attacked and four deaths resulted, and one of the three recoveries has a relapse and can not be reckoned among the recoveries.

The source of infection is supposed to have been the drinking water obtained from the well in the rear of the residence. I inclose a diagram of the premises:

## DIAGRAM OF THE PREMISES.



No. 1 is the well, covered by a platform, indicated by a dotted line; 2 is the sink, from which all the waste water from the pump, soap-suds, dish-water, etc., were received. And it being but five feet from the well, and made by digging out about a barrel of earth, making a hole at bottom of which a tile drain was laid in the direction of the barn. The hole was filled with stone, and extended, making the sink one-third of the way, where it opened into another tile drain extending from north to south.

The privy is 75 feet north of the well ; has a vault.

The barn is 50 yards distant from the house, and on higher ground. The lowest ground is where the north and south tile drain passes between.

The premises are new. The house was built two years ago ; and at same time well was dug.

The family are of cleanly habits, and the house well kept.

The adjacent grounds are sufficiently rolling to afford good drainage.

The first case was dismissed on 26th day of attendance (who was the father of the family). The second case died on 26th day of illness. The third case recovered in 26 days. The fourth case (nurse) died on 8th day of illness. The fifth case required 25 days' attendance, and now has a relapse. The sixth case (mother) died on 14th day of illness.

The seventh case died after ten days' illness. In addition, another faithful nurse in the family during a greater part, and especially the last of the sickness, has since died, after an illness of two weeks. Her death, and perhaps one or two others, was due to infection, *i. e.* contagion, and not to bad drinking water. The use of the water from the well was enjoined as soon as the second case occurred, but which injunction was not strictly obeyed until the occurrence of the fourth and fifth cases. A test of the water revealed a large amount of organic matter.

This county is now, we may say, almost free from malarial influence, if we may judge from the expressed opinions of those who have been familiar with it heretofore. As it is, rarely a strictly malarial case is presented for treatment ; and as regards the genuine old-fashioned fever and ague, it is a disease of the past, not one case being reported or heard of within the borders of the county in the last three years. The extensive ditching and tile draining that has been in progress in the county has drained all the stagnant ponds and pools, and converted invaluable into valuable land, and made good health for the citizens of the county.

The County Asylum has been in good sanitary condition, and with very little sickness among the inmates. The Jail also has been in good condition, with no sickness of any account among the prisoners, which have been but few. The school houses, and all other public buildings of the county coming under the jurisdiction of this office, have been looked after, and can report them all in a good sanitary condition.

I would suggest that you urge upon the incoming Legislature to so amend the law for the government of the State Board of Health so that it is compulsory for all those who solemnize marriage to make their returns.

And I regret exceedingly to make an adverse report as to the interest that many of the physicians of this county take in collecting the material for the making of the statistics of the State, which they know, or ought to know, are of incalculable value. The *doctors* of the county are more prompt and exact than the physicians. Many complain of the expense, and I dare say twenty-five cents will pay the postage for anyone in making the returns. It is a great shame and disgrace upon the profession of the great State of Indiana that she can not get from those to whom she can only look to for the facts she so much desires to complete her statistical reports. And for the medical profession to lose all State pride and permit their State to lag behind in anything that will give it a front rank among the United States is indeed humiliating to all who have the best interests and prosperity of the State at heart.

G. W. BURKE,  
*Secretary Henry County Board of Health.*

## HENDRICKS COUNTY.

There have been reported during the year contagious and infectious diseases as follows: Malignant erysipelas, 1; scarlet fever, 15; typhoid fever 14; cerebro-spinal meningitis, 1; diphtheria, 14.

These cases, occurring in different parts of the county, were essentially sporadic in character. The physicians and citizens, realizing that immunity from these terrible diseases can be procured by proper effort, in nearly every instance promptly complied with the requirements of the State Board of Health, and thus, no doubt, prevented a general spread of scarlet fever in at least two localities, where it appeared in the schools.

That the general sanitary condition of the county is at least up to the average I think the above report abundantly establishes.

I take this opportunity to state that there is a growing sentiment in the county in favor of State medicine.

C. A. WHITE,  
*Health Officer.*

## HUNTINGTON COUNTY.

HUNTINGTON, IND., October 31, 1886.

An analysis of the ten fatal cases of diphtheria occurring in Huntington County during the year, shows that one case occurred in November, one in December, one in January, two in February, one in March, two in July, and two in August. With the exception of those cases occurring in January and February, and in July and August, all have been widely separated as to time and location. Those occurring in January and February were in the city, two of the fatal cases being pupils in the city schools—but by isolation and disinfection the disease was stopped without disturbing the schools or spreading further. The rules excluding those from school who have been exposed, and prohibiting public funerals, are rigidly enforced. In fact, so well are the people aware of the infectious and contagious nature of the disease, that the rules enforce themselves. Three of the cases, occurring in July and August, were in the country, and in one section, and ten other cases, which recovered, occurred within a radius of a mile of the fatal cases. For several years schools in this part of the county have been broken up by the disease. With each recurring school term, when the pupils are huddled together, the disease develops. It is not confined to one district, but first one and then another in and about the north part of Clear Creek and Warren townships. Efforts have been made to have thorough disinfecting, but a rural community is the slowest in the world to appreciate the necessity of an effective application of germicides.

The eleven fatal cases of typhoid fever occurring in Huntington County for the year ending September 30, 1886, have been of a sporadic nature—no two occurring at the same time and place. It is likely that many of these might better be classed as typho-malarial fevers.

LAGRANGE SEVERANCE, M. D.,  
*Secretary County Board of Health.*

## JAY COUNTY.

PORTLAND, IND., October 31, 1886.

*C. N. Metcalf, M. D., Secretary Indiana State Board of Health, Indianapolis, Ind. :*

DEAR DOCTOR—The following is a fair resume of the nature, extent and fatality of the contagious and infectious diseases in Jay County, Ind., for the year ending September 30, 1886 :

October, 1885, there were 5 cases of diphtheria and 7 cases of scarlet fever.

November, 1885, there were 2 cases of diphtheria and 14 cases of scarlet fever.

December, 1885, there were 2 cases of diphtheria and 9 cases of scarlet fever.

January, 1886, There were 6 cases of scarlet fever.

February, 1886, there were 2 cases of diphtheria and 3 cases of cerebro-spinal fever.

March, 1886, there was 1 case of diphtheria and 1 case of scarlet fever.

For April, May and June, 1886, there were none reported.

July, 1886, there were 2 cases of diphtheria.

August, 1886, there were three cases of diphtheria and 1 case of scarlet fever.

September, 1886, there were 6 cases of diphtheria.

## RECAPITULATION.

Diphtheria . . . . .	23 cases.
Scarlet fever . . . . .	38 cases.
Cerebro-spinal fever . . . . .	3 cases.

Of the above 23 cases of diphtheria 6 were fatal, 3 cases of scarlet fever were fatal, and 1 case of cerebro-spinal fever proved fatal.

The origin of these diseases were, in most cases, traceable to ill ventilation, poor surface drainage and improper diet. The great majority were of sporadic origin, and by the happy co-operation of the physicians throughout the county they were kept isolated and prevented anything like an epidemic.

The sanitary condition of the county is fair and rapidly improving, as there are a great many miles of gravel road being made in the county, thereby greatly assisting the already extensive drainage that is being done in the county.

Very truly yours,

I. G. SIMS,

*Secretary Jay County Board of Health.*

## KOSCIUSKO COUNTY.

WARSAW, IND., October 26, 1886.

*Dr. Metcalf :*

DEAR SIR—In reply to your circular of September 30, will say we have had no epidemic or scarcely a sporadic case of small-pox, diphtheria, scarlatina or typhoid fever in our county this year. We have had one or two cases of scarlatina reported. Wherever and whenever reported we immediately quarantine and use all the means recommended to prevent its spread. The sanitary condition of our county is good. Respectfully, etc.,

C. W. BURKET,

*Secretary Kosciusko County.*

## LAPORTE COUNTY.

LAPORTE, IND., October 31, 1886.

The number of cases of contagious diseases reported in Laporte County, during the year ending September 30, 1886, is one hundred and twenty-two, as tabulated herewith, by townships and months. This number is made up of seventy-two cases of scarlet fever, of which but a single case was fatal. Diphtheria, forty-four cases; fatal, eight cases. Whooping cough, three fatal cases; none other being reported. Measles, three cases, with no fatality. All, except six cases, appeared in Michigan City and Laporte, and in the townships in which they are respectfully located, appearing in different, and frequently in widely separated localities, at the same time evading the closest scrutiny in attempts to definitely locate its origin, other than from individuals affected by it. Speculation upon the origin and characteristics of the specific poison-germ or microbe, to which the disease is undoubtedly due, would be profitless in the present state of knowledge upon the subject.

Isolation and disinfection were the principal measures resorted to in endeavors to control, or limit, its spread. It still successfully resisted all efforts to banish it, as seen by its persistence through the entire year, except only the month of July. Fortunately it has been exceptionally benign in character, and the fatality comparatively insignificant.

The cases of diphtheria were more widely distributed. The majority of cases were found away from the two principal towns in the county. In a small village in the southwestern part of the county the contagion was apparently endowed with a greater degree of virulence and a larger percentage of fatal cases resulted.

I do not know that the bacillus or contagion of diphtheria has been so successfully interviewed as to disclose its habitat, when outside the animal man, its few or many changes of form and habits in the course of its development, whether its invasion of the human body is under an entirely different form (an analogous to that of many creatures, with whose metamorphoses we are somewhat acquainted), facilitating its aerial journey to its favorite field of labor, destruction or development of its own peculiar characteristics, during the period of so-called incubation. Whether the presence or absence of the disease is due to different stages of development of the bacillus, equivalent to Pasteur's attenuation or extinction of its virus, to be rehabilitated in a subsequent stage of its existence?

These with me are questions still to be determined.

The various periods of time occupied in incubation (three to fourteen days), apparently prove a progressive development from an inert, or innocuous, to an active and virulent stage, in which latter state it is recognized by the aid of a microscope, presenting always the same characteristics.

The theory of spontaneous generation in cesspool or sewer is apparently disproved by the fact that a sterilized material, fitted to nourish these invisible creatures, would never be fertilized if protected by a medium which need not exclude the air, but shall prevent the entrance of the invisible creatures floating therein.

We nearly all recognize the necessity and value of cleanliness. Disinfection and isolation, to prevent the invasion and limit the dissemination of contagion, are means pretty generally adopted in this county, and I do not doubt the influence of the State Board of Health, through its instructions scattered broadcast over the State, through its subordinates, the county and city boards, have saved to the

people many times over the expense incurred, notwithstanding the enterprise is yet in its infancy, and that the instructions have been but imperfectly obeyed.

R. O. CRANDALL,  
Secretary Board of Health Laporte County.

## SCARLATINA.

TOWNSHIPS.	1885.			1886.								
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
Michigan . . . . .	2	10	1	1	4	9	4				3	
Center . . . . .		1	4	1	7	5	3	4	1		3	
Noble . . . . .						3						
New Durham . . . . .									1			
Pleasant . . . . .									2			

## DIPHTHERIA CASES.

TOWNSHIPS.	1885.			1886.								
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
Hudson . . . . .												
Galena . . . . .												
Springfield . . . . .												
Michigan . . . . .	3	1	1				1	1		1		
Coolspring . . . . .												
Center . . . . .	1	1	11	111	111		1			1		
Kankakee . . . . .												
Wills . . . . .		1	3									
Lincoln . . . . .												
Pleasant . . . . .												
Scipio . . . . .												
New Durham . . . . .												
Clinton . . . . .												
Noble . . . . .												
Union . . . . .												
Johnson . . . . .												
Hanna . . . . .	16											
Cass . . . . .			4									
Dewey . . . . .												

## POSEY COUNTY.

ANNUAL REPORT OF TYPHOID FEVER, DIPHTHERIA AND SCARLET FEVER  
OCCURRING IN POSEY COUNTY, IND., 1886.

There have been reported the following cases of diseases dangerous to public health:

Typhoid fever . . . . . 12 cases.  
Scarlet fever . . . . . 22 cases.  
Diphtheria . . . . . 21 cases.

For the number and particulars of fatal cases I respectfully refer you to my quarterly death reports.



A number of scarlatina cases were occasioned by the carelessness of attending physicians neglecting to enforce perfect isolation of cases, several occurring where with proper care there need not have been but the one.

The spread of infection in diphtheritic cases was occasioned, at least to a considerable degree, by a great many of them being treated for tonsilitis or common sore throat.

There was little, if any, spread of typhoid fever; the cases, as a rule, being well managed, in most instances, according to the rules of the State Board of Health. From the best information obtainable, cases of contagious diseases have been much more thoroughly and promptly reported this year than ever before. Although, I have reason to believe that there occurred double the number of cases of typhoid fever than were reported.

The interest in sanitary matters and in Boards of Health in this county, judging from the number of inquiries made in regard to the same, have received a healthy impulse and bids fair to show good, practical results in the near future.

D. C. RAMSEY, M. D.,

*Health Officer Posey County.*

MT. VERNON, IND., November 13, 1886.

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#### NEWTON COUNTY.

FORESMAN, IND., October 31, 1886.

*C. N. Metcalf, M. D., Secretary State Board of Health:*

You requested that I should make a report of the cases of typhoid fever and the results. There have been but two cases reported to me, and they both recovered, only one occurring in any one family. There has been no epidemic of any kind occurring in the county for the year 1886, only one case of diphtheria being reported, and that very mild.

No scarlatina or measles, so that any report on the cases of typhoid fever, isolated as they were, would be of very little advantage.

Yours respectfully,

G. B. SMITH, M. D.,

*Secretary Board of Health, Newton County, Ind.*

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#### SCOTT COUNTY.

SCOTTSBURG, IND., October 31, 1886.

*C. N. Metcalf, Secretary Indiana State Board of Health:*

DEAR SIR—In answer to your circular to the Secretaries of the State Boards of Health of the several counties of the State of Indiana, requesting a resume of the nature, extent and fatality of the contagious and infectious diseases, as small-pox, scarlatina, typhoid fever, etc., their cause and the means employed for their prevention and the sanitary condition of the county, I report as follows:

There have been no cases of small-pox in the county within the last year. A few sporadic cases of scarlatina and one death.

To make the report on typhoid fever more intelligible, I will give a short history of the fever as it has occurred here for the last twelve years or more.

In the year 1875 I came here from the limestone region of Washington County, in this State, where malaria was but little known, but where typhoid fever was prevalent. At this time the greater portion of Scott County was troubled with intermittent fevers of a severe and fatal character, few families being exempt from them, which frequently relapsed into a low, continued fever, and which, for the want of a better name, the doctors called typho-malarial fever. The patients would have chills, followed by high fever, profuse perspiration and the higher the fever the more profuse the perspiration. At the same time the temperature would range from 103° to 105°, and this high temperature continued for days and even weeks. The tongue had a heavy coat of a muddy appearance and moist. This appearance would continue for a term of from ten days to two weeks, when the tongue would clean off and become red, dry and cracked, as in typhoid fever, but there was no diarrhea or hemorrhage from the bowels, and no diseases of peyers patches, but tympanites, well marked, and when death supervened the skin became cold and clammy from two to four days before death. About one-tenth of all thus attacked died.

This type of fever continued until about the year 1879, when intermittent fevers almost entirely disappeared, and well-defined typhoid fevers set in, with its slow approach, dry skin, brown, dry tongue; the pupils of the eyes dilated, when later becoming contracted, and diarrhea, tenderness in the groins, hemorrhage from the bowels—in fact, true enteric fever.

Now, we prevent the spread by prohibiting any one sleeping in the same room with the typhoid patient where it can be avoided, and using disinfectants, having the excretions buried, the bedding sunned and aired every day, and admit all the sunshine possible into the sick-room; the fatality is about 15 per cent.

The sanitary condition of a portion of the county is good. The county asylum consists of several small buildings, but they are well kept, and the health of the inmates has been exceptionally good for the last year.

Our county is small, consequently the number of paupers is small, ranging from ten to twenty persons.

I said that a portion of the county was in a good sanitary condition. I think all that is in the power of the citizens to make and keep so. We have a large, wet bottom extending through the greater part of the county, known as the Stuckers Fork bottom, ranging from one to two miles wide, with a sluggish stream running through it, which is crooked and filled with drift. All of its tributaries are likewise sluggish, which constitute a vast amount of untillable land, and the citizens are not able to do the amount of labor that is required to put it into cultivation, and I think that the State will have to come to their aid and make an appropriation to straighten and deepen the channel of the stream. Then the citizens could go to work, tile and reclaim thousands of acres of the best of land, which would soon return a reward to the State which would abundantly recompense her for the appropriation.

Scottsburg is well drained with tile, and now it is as healthy a town as there is in the State, and Lexington, being built on a rock and in the rolling part of the county, is all drained and healthy. I think the great preventive of disease here is to drain our lands, for we are blessed with abundance of good water at a depth of from 16 to 20 feet, and deleterious metals are unknown here.

Yours respectfully,

MILTON W. SMITH,  
*Secretary Board of Health Scott County.*

## SPENCER COUNTY.

ROCKPORT, IND., Oct. 31, 1886.

*C. N. Metcalf, M. D., Secretary State Board of Health:*

DEAR DOCTOR—From September 30, 1886, to September 30, 1886, the records of our County Board of Health show that forty cases of diphtheria have occurred in our county during that time. Of this number six are reported to have died. The disease made its appearance in North Rockport during the months of October, November and December, 1885. We had an occasional isolated case in different portions of the county during the early part of the present year.

Four reports of deaths from typhoid fever have been received during the statistical year.

I regard our county in fair sanitary condition.

Yours truly,

F. M. HACKLEMAN, M. D.,  
*Secretary Spencer County Board of Health.*

## TIPPECANOE COUNTY.

LAFAYETTE, IND., Oct. 31, 1886.

*To Dr. C. N. Metcalf, Secretary State Board of Health, Indianapolis, Ind.:*

DEAR SIR—In conformity with your order of recent date, requesting me to report on the work done during the past year by the Tippecanoe County Board of Health, and on the general sanitary condition of the county, I respectfully submit the following report: Owing to the difficulty experienced in obtaining statistics from distant portions of the county, I feel assured that a set of tables compiled from the physicians' returns would give no adequate idea of the sanitary condition of those districts. I, therefore, prefer to speak in general terms, from information personally obtained from physicians throughout the county. During the spring and early summer months a widely spread epidemic of German measles prevailed among children and young adults, the disease showing a predilection for the former. There were numerous instances reported where the disease was contracted by healthy persons from associating with those afflicted. Several deaths were reported to have occurred, but as German measles is usually considered almost free from danger, there must have been an error of diagnosis in these cases. The cause of the epidemic could not definitely be determined, but as it was coincident with one of a similar nature in the adjoining counties, we may infer it to be due to certain atmospheric or telluric conditions, whose causal relations to disease are not thoroughly understood. The usual number of malarial diseases were reported during the summer months, and in most instances where bad drainage or nuisances of various kinds were recognized, these causes were promptly removed on the request of the Board.

I wish to state here that in our official relations we have had, as a rule, the hearty co-operation of private individuals, railroad corporations, etc., in the removal of those nuisances deleterious to public health. The general health throughout the county seems better than it has been for years, and physicians are complaining that there is little doing.

As regards the city of Lafayette I can not report so favorably. Although the past year seems to have been a healthy one, this seems to be rather through a special dispensation of providence than from the perfection of our sanitary regulations, for we have in our midst sanitary evils which should not be passed over without comment. What is probably the most dangerous to public health is the old Wabash & Erie Canal which runs through the lower part of the city. Some ten years ago this water course was abandoned for purposes of navigation, and allowed to go to ruin for want of repair. A small stretch about three miles in length, receiving its water supply from Wild Cat Creek and extending from that point through the city to the paper mill, was still kept in fair shape for the water power it furnished several mills. This portion of the canal received a great deal surface filth from the city gutters. This did not seem so objectionable, so long as the canal carried a good head of water, for in this case the objectionable matter would be greatly diluted, and the current of water sufficiently swift to carry it away. But at times, and this occurred usually during the spring and summer months, the water supply would fail, being caused by a break in the canal banks, low water in Wild Cat Creek or a damaged condition of the dam. On these occasions the water would run out, leaving the canal bed exposed with here and their pools of stagnant water. This left exposed a large quantity of organic matter, consisting of soft, black muck and water grass, with an occasional dead cat or dog. This matter being now placed under favorable conditions for decomposition, in a few days the stench arising from the putrid mass would become unbearable. Complaints to the Board were frequent and forcible, and cases of diarrhea and fevers of a remittent type were reported in families living in the vicinity of the canal. Something had to be done to preserve the health of the community. Dr. C. N. Metcalf, of the State Board of Health, visited the city, and after a thorough examination of the nuisance, authorized the local board to bring suit for damages against the canal owners. Notice was duly sent to the proprietors, but on receiving a promise that the nuisance would be abated as soon as possible, further proceedings were stayed. Fully three weeks elapsed before such repairs were made in the dam and canal banks so as to allow a good stream of fresh water through the city. During this period there can be no doubt that the healthfulness of the lower portion of the city was seriously impaired. Since the repairs were made there has been no further trouble in this direction, but I have every reason to believe that this will not last and that next summer will bring a repetition of this year's experience. As the Board has taken the matter in hand they propose to follow it up until permanent results are obtained.

In conclusion I may say there are but two dispositions to be made of the canal—either fill it up, or to keep it in good repair. The latter seems, in my judgment, to be more practical, for there is sufficient fall from Wild Cat Creek to the paper mill to give a good current. The creek water is purer than that from the river, and if it be kept free from city contamination, we would have a body of water valuable as a motive power, and at the same time not detrimental to public health.

Another matter of interest from a sanitary standpoint is the quality of water furnished the city by the water-works.

This water is taken from a crib built into the river a short distance above the city. Another supply pipe extends from the canal to the works. This latter pipe is not in constant use, but I am informed that at times a portion of the water supply is derived from this source. The water is forced into the water mains, and from these through the small branch pipes to the consumers, the excess over and above the consumption being forced into the reservoir, where it is stored for future use.

Professor H. A. Huston, of Purdue University, has, during the past year, made repeated analyses of the water from both river and canal. He has kindly furnished me with the results obtained, and I, therefore, incorporate them in this report.

## ANALYSIS OF RIVER WATER—BY PROF. H. A. HUSTON.

No.	DATE.	Total Solids.	Cl.	N. H. <sub>3</sub> Free.	N. H. <sub>3</sub> Albuminoid.	REMARKS.
	1886.					
1	July 16.	17.8	.15	.012	Not de-termined.	Drawn from water mains.
2	July 18.	19.7	.1	.036	.230	Drawn from water mains.
3	July 23.	18.1	Not de-termined.	.018	.204	Drawn from water mains.
4	July 23.	.....	.1	.915	.205	Taken from river near crib.

## ANALYSIS OF WATER FROM CANAL.

No.	DATE.	Total Solids.	Cl.	N. H. <sub>3</sub> Free.	N. H. <sub>3</sub> Albuminoid.	REMARKS.
	1886.					
5	July 26.	17.5	.04	.052	.220	Sample drawn from the locks (about two miles above the city).
6	July 26.	18.2	.02	.133	.335	Water taken from entrance of main from canal to water works.
7	July 26.	16.8	.1	.054	.270	From canal at foot of Main street. Taken at 11 A. M.

From the results above given it will be noticed the albuminoid determinations are constantly high for both canal and river water, and that the percentage of chlorine is much lower in the former than the latter. Professor Huston informs me that the canal water is much purer than these results would seem to indicate, as No. 5 was taken from the locks at a time when the water was unusually low in the creek. Sample No. 6 was also taken during low water.

No. 7 being taken from a point in the city a higher per cent. of albuminoids might be expected. That this was not the case is probably due to the fact that the specimen was taken early in the day, before much sewage had been emptied into the canal. The quantity of free ammonia in No. 6 is caused by the proximity of the gas works. I add another table, also furnished by Prof. Huston, containing a sanitary analysis of eight wells from various portions of the city. These wells were not chosen indiscriminately, but were selected on account of their situation near drains or sewers, or at the base of a hill in a gravel subsoil. In each case, therefore, there existed a strong suspicion of water contamination. An examination of the table will show the water furnished by these wells to be of good quality, with two exceptions (Nos. 6 and 7).

## WELL WATER ANALYSES.

No.	Solids.	Cl.	N. H. <sub>3</sub> Free.	N. H. <sub>3</sub> Albuminoid.	Date, 1886.
1	55	3.9	.088	.079	July 19.
2	58	4.6	Not deter- mined.	.086	July 20.
3	65.1	3.75	.014	Not deter- mined.	July 20.
4	56.5	3.4	.014	.042	July 21.
5	44.8	3.75	.01	.054	July 21.
6	37.5	2.25	.02	.106	July 21.
7	6.5	4.4	.02	.105	July 24.
8	48.1	2.3	.013	.070	July 24.

Upon subsequent examination it was found that No. 4 was a spring, which accounts for the purity of the water.

RICHARD B. WETHERILL, M. D.,  
*Secretary Tippecanoe County Board of Health, Lafayette, Ind.*

LAFAYETTE, IND., October 31, 1886.

C. N. Metcalf, M. D., *Secretary State Board of Health:*

DEAR DOCTOR—In reply to yours of recent date calling for a report of contagious diseases in this county since September 30, 1885, I report as follows:

During the past year, fifty-three cases of scarlatina have been reported to the Board, of which thirty-one were females and twenty-two males. From these cases there were five deaths. The greatest number received for any one month was November, 11; the least number August, none. The returns show a gradual decrease in number of cases from November to August. The disease seemed for the most part of sporadic origin but two cases can be traced to bad drainage. Although isolation and disinfection were as far as possible enforced, the relatively large number of cases, in the same family, lead me to believe that precautions of this nature were not strictly adhered to, and the disease was in some instances spread through direct contact to those whose presence was unnecessary to the care of the patient. Considering the fearful ravages annually produced by this disease, I do not think physicians can exercise too much care in keeping the patient completely isolated until *all signs of desquamation* have disappeared. Some of our brethren are a little too lax on this point, for I have seen those on the street who should, in my judgment, still be under quarantine restrictions. The number of cases of measles reported does not give an adequate idea of the extent of the disease in the county. As a rule, cases of variola, scarlatina and diphtheria are promptly reported by the profession, but there is a disposition not to report measles unless it is a severe and dangerous attack.

Eight cases of typhoid fever have been reported with six deaths. Two of the cases occurred in the same family, but in neither instance was the attack fatal. Two of the attacks could be attributed to contaminated drinking water. In the remainder the cause could not be ascertained.

*Diphtheria.* Twelve cases reported with three deaths. Of the fatal cases two were adults and one child. There can be no doubt that many cases reported as diphtheria are aggravated cases of ulcerative pharyngitis or tonsilitis. I can only

give the probable cause of the disease in one instance. In this case, which resulted fatally, foul emanations from a neighboring sewer indicated an important etiological factor in the production of the attack. As a rule, disinfection was carried out according to approved methods, and when the disease spread to others of the same family, it was probably due to a failure to completely isolate the patient.

Yours truly,

RICHARD B. WETHERILL, M. D.,  
*Secretary County Board of Health.*

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### TIPTON COUNTY.

TIPTON, IND., October 31, 1886.

*Dr. C. N. Metcalf, Secretary State Health Board:*

DEAR SIR—In regard to the cases of diphtheria reported this quarter, all occurred within the limits of one township, and efforts were made, with fair success, to isolate all cases as soon as a diagnosis was made, but the affection manifested itself in most of the families without any apparent means of contagion. The drainage in that locality is fair but not the best, and the greater part of it has been constructed within the last five years. The affection appears to be entirely subdued.

Our county was visited by an epidemic of whooping-cough in the spring months, but no efforts were made to collect statistics.

Yours respectfully,

A. S. DICKEY,  
*Secretary County Board of Health.*

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### WASHINGTON COUNTY.

SALEM, IND., October 31, 1886.

DEAR DOCTOR—Your letter of inquiry, relating to the various contagious and infectious diseases which have prevailed in Washington County for the year ending September 30, 1886, is received, and, in response, will state that only sporadic cases of either class have been reported, and the mortality was low. We have had no small-pox and but one or two cases each of scarletina and diphtheria. Of the infectious and contagious diseases, typhoid fever takes the lead, and it is very probable that several of the cases reported were, in reality, typho-malarial fever, as malarial affections have been very prevalent during the latter part of summer and early autumn.

It may be said that the sanitary condition of the county is good, but several places under the supervision of local health officers are susceptible of improvement.

Yours truly,

CHARLES W. MURPHEY, M. D.,  
*Secretary Washington County Board of Health.*

## WAYNE COUNTY:

RICHMOND, IND., October 31, 1886.

*C. N. Metcalf, M. D., Secretary State Board of Health:*

DEAR SIR—The general health of Wayne County for the year ending September 30, 1886, was not quite equal to the average.

In the earlier part of the year, including autumn and winter, there was added to the ordinary diseases of the season a phenomenal amount of exanthematous disease, supposed at the time to be scarlet fever, and under that name 272 cases were reported, but only ten deaths. Even this large number of cases probably did not cover more than half the cases that occurred, as numbers of cases were so slight as not to demand the attention of a physician, and of those seen by a physician not all were esteemed scarlet fever, but some other exanthem that did not require report.

Most probably there were two or more distinct diseases, for while some of the cases presented all the features of typical scarlet fever, most of them conformed to the description of rubella given by some authors. Whatever it was, it was a wide-spread endemic, originating in Richmond about July, 1885. It spread over the country, being most abundant from October to April, but continued until the close of the year.

There has been no case of small-pox reported in the county during the year.

Typhoid fever has continued about as usual throughout the year, forty-three cases having been reported and nineteen deaths. This gives an excessive mortality, it being positively certain that not all the cases of disease have been reported. In some instances a death from typhoid fever has been reported, when no previous return of the disease had been made. It is not possible to estimate the amount of error in this behalf that our returns cover.

The returns of diphtheria number 113 cases and 14 deaths. The most of these cases and deaths were returned in the last quarter of the year, and at its close the disease was still prevalent, particularly in the city of Richmond.

In other respects the health condition of the county has not been widely different from late previous years. Consumption claimed seventy victims, and other diseases of the respiratory organs thirty-eight. Consumption, therefore, caused over fifty per cent. more deaths than all the so-called dangerous diseases combined.

Very truly yours, etc.,

JAS. F. HIBBERD, M. D.,  
*Secretary Wayne County Board of Health.*

## WHITLEY COUNTY.

SOUTH WHITLEY, October 31, 1886.

Whitley County's sanitary condition is fair. We have had no epidemic of any contagious disease within the last six months, and no indications of any. Everything which has a tendency to cause trouble is being removed. Our school building and grounds are being put into a good sanitary condition; also, our county is getting a general drainage in the way of ditching, etc. I think, taking everything together, the sanitary conditions are at least good, and are improving all the time.



Scarlatina—Two cases were reported, and two deaths after a few days' illness. They were in different parts of the county, and the source of contagion was unknown. Extra care was used by the physicians in attendance in the way of isolation and disinfection.

There were a few sporadic cases in the county, which were not reported.

Diphtheria—Twenty cases were reported and three deaths. These cases followed the epidemic of 1885 in this county.

Since April, 1886, there have been no cases reported.

This disease was wiped out by isolation and disinfection, the physicians in the county generally coöperating in the matter.

E. L. EBERHARD, M. D.

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## BIRTHS.

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The total number of births for the year ending September 30, 1886, was 38,310. Of this number 19,883 were males and 18,427 females; 678 were colored and 904 still born. There were 449 twin births and 8 triplets; 560 of the children were illegitimate; 242 fathers and 3,375 mothers were under twenty years, 76 mothers were between fifty and sixty years and 14 fathers were 70 years of age or over. The smallest number was born in the month of December and the greatest number in July. The nationality of the parents was as follows: 32,449 fathers and 33,809 mothers were Americans; 3,779 fathers and 2,628 mothers were foreigners; 1,624 fathers and 1,415 mothers were not reported.

## TAB

## BIRTHS BY

*Number of Males and Females for each*

COUNTIES.	1885.						1886.					
	October.		November.		December.		January.		February.		March.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Adams . . . . .	10	7	8	6	6	3	15	16	16	18	4	23
Allen . . . . .	34	23	31	24	33	24	38	35	32	35	33	36
Bartholomew . . . . .	21	33	29	14	25	30	16	16	12	23	33	27
Benton . . . . .	8	6	11	5	13	7	11	11	11	9	5	11
Blackford . . . . .	5	10	7	12	8	7	8	10	14	11	9	7
Boone . . . . .	16	25	16	26	25	13	19	27	20	28	27	34
Brown . . . . .	13	8	12	6	6	6	10	8	7	2	3	6
Carroll . . . . .	25	21	20	20	20	28	31	22	22	31	20	20
Cass . . . . .	32	27	19	17	16	4	22	18	16	22	9	21
Clark . . . . .	2	2	4	4	4	4	16	4	7	14	28	21
Clay . . . . .	27	22	19	30	13	22	14	21	22	17	22	25
Clinton . . . . .	4	3	9	9	9	6	6	4	4	5	10	4
Crawford . . . . .	6	1	10	8	7	5	14	11	8	6	5	13
Davies . . . . .	19	25	11	13	22	19	21	13	23	28	27	23
Dearborn . . . . .	8	15	13	13	10	16	9	12	24	21	16	15
Decatur . . . . .	13	13	16	10	10	9	30	24	16	23	19	19
Dekalb . . . . .	10	9	5	8	7	14	10	11	10	8	9	13
Delaware . . . . .	37	40	20	28	30	27	46	39	17	44	28	28
Dubois . . . . .	10	20	17	15	26	17	13	19	22	10	29	23
Elkhart . . . . .	22	24	9	13	11	12	37	37	43	28	34	26
Fayette . . . . .	15	15	6	4	12	8	7	10	9	7	12	10
Floyd . . . . .	26	22	14	16	22	17	18	29	30	29	25	25
Fountain . . . . .	16	15	8	12	5	18	27	21	19	19	14	10
Franklin . . . . .	9	20	3	3	1	1	23	13	8	12	8	8
Fulton . . . . .	11	6	6	6	6	3	17	15	10	4	6	11
Gibson . . . . .	26	21	19	22	23	20	27	18	22	25	11	23
Grant . . . . .	15	7	18	10	7	10	22	21	12	19	11	21
Greene . . . . .	26	19	21	16	24	15	19	25	15	17	16	11
Hamilton . . . . .	32	35	23	25	27	16	41	34	18	32	26	20
Hancock . . . . .	22	20	23	21	21	13	22	13	22	14	26	11
Harrison . . . . .	22	16	18	23	10	9	26	35	23	18	26	16
Hendricks . . . . .	19	20	15	16	13	14	9	21	26	13	20	27
Henry . . . . .	23	18	18	21	15	10	18	20	25	18	24	16
Howard . . . . .	16	26	17	14	21	16	26	15	16	13	41	9
Huntington . . . . .	32	24	23	28	25	18	29	20	13	22	20	27
Jackson . . . . .	25	32	11	15	13	12	24	24	15	18	33	26
Jasper . . . . .	12	8	5	14	8	8	6	11	10	5	12	7
Jay . . . . .	29	22	21	19	18	20	28	20	22	22	31	10
Jefferson . . . . .	10	19	11	15	12	12	6	4	18	10	6	4
Jennings . . . . .	13	13	11	10	8	7	13	10	13	12	18	9

LE A.

COUNTIES.

*Month, Year Ending September 30, 1886.*

1886.												Males.	Females.	Total.
April.		May.		June.		July.		August.		September.				
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
9	11	9	8	10	6	14	10	9	14	7	12	117	134	251
32	20	24	21	32	31	37	27	40	33	20	25	386	334	720
17	22	17	26	25	19	25	22	32	28	18	34	270	284	554
9	10	9	12	8	9	13	12	19	9	9	6	126	107	233
10	9	7	9	6	5	11	9	14	9	14	9	113	107	220
27	20	22	24	21	15	29	39	16	17	13	20	251	288	539
13	18	3	3	9	4	9	9	6	5	16	5	107	80	187
23	19	28	11	26	18	19	24	17	22	26	17	277	253	530
20	11	18	7	14	14	34	29	24	24	22	12	246	206	452
16	13	27	18	20	30	51	45	12	15	21	14	208	184	392
16	22	18	19	10	6	27	23	24	20	22	15	234	242	476
27	13	4	7	5	8	7	12	5	8	8	3	98	78	176
7	5	7	11	4	5	14	12	8	13	13	13	103	103	206
29	29	18	19	15	20	32	17	20	23	21	16	258	245	503
18	27	16	16	10	17	22	22	19	14	20	18	185	206	391
27	21	11	10	19	14	12	10	18	21	16	19	207	192	399
15	8	18	4	13	16	15	5	9	9	12	18	133	123	256
31	21	40	34	19	27	43	35	22	31	26	42	359	396	755
21	25	22	13	10	11	17	20	9	9	18	9	214	191	405
26	36	29	28	46	34	36	42	41	35	47	35	381	350	731
15	2	11	7	16	6	7	14	11	3	13	6	134	92	226
24	26	9	13	10	11	48	39	20	22	20	15	266	264	530
16	12	16	11	16	16	19	27	15	11	12	7	183	179	362
5	5	8	6	8	8	13	7	8	8	4	5	96	96	192
7	4	23	11	7	4	14	10	18	12	1	1	129	84	213
22	17	18	16	15	10	22	24	26	17	11	19	242	232	474
16	26	12	16	18	16	24	22	14	10	13	14	182	192	374
15	6	19	10	9	5	19	10	16	19	16	8	215	161	376
40	36	44	31	28	23	40	35	47	29	40	35	406	351	757
19	20	19	23	13	27	15	30	28	21	23	29	253	242	495
33	32	14	8	15	14	9	5	30	26	22	23	248	225	473
22	11	13	18	15	15	32	17	23	20	26	39	233	231	464
21	23	21	21	16	18	24	28	32	30	23	20	260	246	506
21	16	10	18	18	14	18	9	20	19	23	11	247	180	427
26	25	17	20	28	21	36	28	23	27	24	26	296	286	582
33	27	10	13	36	35	27	20	13	14	36	38	276	274	550
11	18	2	5	6	3	17	15	11	6	8	5	108	105	213
18	20	19	26	13	17	40	18	19	25	20	28	278	247	525
4	6	6	5	4	8	12	3	6	9	6	11	101	106	207
18	9	14	7	9	8	12	11	5	5	12	14	146	115	261

TABLE A—

COUNTIES.	1885.						1886.					
	October.		November.		December.		January.		February.		March.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Johnson . . . . .	18	15	21	18	15	15	21	12	22	20	17	14
Knox . . . . .	19	17	19	12	6	9	7	5	25	21	13	12
Kosciusko . . . . .	11	16	10	13	9	4	14	17	14	11	20	13
Lagrange . . . . .	7	6	10	3	12	8	7	19	6	14	12	11
Lake . . . . .	18	15	5	10	6	10	17	17	6	12	20	10
Laporte . . . . .	30	22	20	12	16	16	20	25	21	25	23	27
Lawrence . . . . .	12	7	14	11	15	12	12	9	10	13	13	14
Madison . . . . .	29	25	35	35	39	34	43	29	37	40	53	39
Marion . . . . .	114	114	93	93	115	94	131	114	120	115	146	122
Marshall . . . . .	13	14	10	10	13	17	17	17	6	12	13	15
Martin . . . . .	15	5	18	12	8	8	17	10	8	10	10	10
Miami . . . . .	9	15	16	13	19	14	17	14	27	16	9	13
Monroe . . . . .	15	13	23	20	6	8	18	16	16	11	10	13
Montgomery . . . . .	45	37	11	15	13	19	28	13	30	20	27	28
Morgan . . . . .	23	21	22	10	6	5	16	8	8	12	11	13
Newton . . . . .	8	7	4	1	2	1	7	10	1	5	7	9
Noble . . . . .	8	12	4	1	1	2	5	10	4	5	6	11
Ohio . . . . .	4	5	2	1	2	2	5	2	4	2	2	4
Orange . . . . .	6	3	7	6	13	9	7	20	17	12	11	15
Owen . . . . .	16	8	4	12	4	10	17	17	19	12	12	9
Parke . . . . .	19	12	9	9	6	9	14	14	10	15	13	14
Perry . . . . .	10	10	8	15	14	15	15	15	14	18	12	14
Pike . . . . .	52	55	22	19	12	12	21	16	19	23	22	16
Porter . . . . .	5	4	6	9	9	9	12	14	8	11	10	13
Posey . . . . .	23	32	31	16	21	23	30	45	21	29	16	40
Pulaski . . . . .	6	3	5	6	14	8	5	5	6	5	3	9
Putnam . . . . .	18	18	15	13	8	14	22	11	21	22	27	22
Randolph . . . . .	58	39	21	22	31	32	26	30	28	27	31	22
Ripley . . . . .	16	16	16	9	16	23	13	12	22	27	17	17
Rush . . . . .	25	15	10	14	8	5	12	4	11	8	13	4
Scott . . . . .	10	14	8	3	10	8	10	7	11	11	15	9
Shelby . . . . .	21	15	8	12	8	13	26	20	19	19	16	15
Spencer . . . . .	16	25	20	12	30	9	23	23	19	15	25	25
Starke . . . . .	1	2	3	3	3	3	1	1	5	3	5	5
Steuben . . . . .	12	4	3	..	..	..	2	4	3	5	3	4
St. Joseph . . . . .	53	23	31	28	48	39	26	29	25	23	24	28
Sullivan . . . . .	16	20	14	12	9	7	5	2	12	17	11	9
Switzerland . . . . .	13	7	14	7	5	2	4	5	5	6	5	5
Tippecanoe . . . . .	18	13	19	18	10	18	22	20	17	18	10	15
Tipton . . . . .	4	14	8	9	13	6	12	12	17	13	56	36
Union . . . . .	6	4	6	10	1	2	4	4	4	1	6	1
Vanderburgh . . . . .	47	34	33	25	39	37	32	31	41	45	17	25
Vermillion . . . . .	5	10	4	9	7	9	6	9	10	7	6	2
Vigo . . . . .	43	30	39	26	49	46	62	62	48	47	38	38
Wabash . . . . .	29	30	32	34	19	20	26	19	16	20	25	29
Warren . . . . .	11	6	9	12	10	8	9	7	9	9	16	7
Warrick . . . . .	2	1	16	9	12	10	24	26	16	18	18	14
Washington . . . . .	26	10	17	22	8	9	15	16	14	13	16	3
Wayne . . . . .	41	26	30	28	43	34	33	38	25	36	51	35
Wells . . . . .	12	16	11	7	11	11	16	11	12	11	15	13
White . . . . .	9	13	15	16	3	8	11	14	9	9	10	11
Whitley . . . . .	7	11	4	8	6	1	20	12	11	7	8	16
<b>Total . . . . .</b>	<b>1,775</b>	<b>1,528</b>	<b>1,413</b>	<b>1,335</b>	<b>1,392</b>	<b>1,263</b>	<b>1,779</b>	<b>1,655</b>	<b>1,590</b>	<b>1,551</b>	<b>1,743</b>	<b>1,614</b>

Continued.

1886.													Males.	Females.	Total.
April.		May.		June.		July.		August.		September.					
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
21	8	15	21	17	16	20	19	26	14	24	21	237	193	430	
33	28	10	7	13	14	25	33	31	26	24	16	225	200	425	
14	16	20	9	14	13	15	14	7	11	9	2	157	139	296	
6	12	5	4	8	7	19	11	25	13	13	13	130	123	253	
22	11	18	11	14	6	12	17	14	7	18	11	170	137	307	
33	34	33	31	31	28	26	27	27	27	26	28	306	302	608	
10	10	11	11	11	18	25	27	14	12	12	21	159	165	324	
43	39	39	38	33	22	44	31	41	27	36	30	472	389	861	
106	88	95	92	129	104	109	99	125	87	105	102	1,382	1,224	2,606	
19	8	16	12	11	5	9	7	9	13	14	9	150	139	289	
11	5	3	5	11	10	16	17	8	5	7	5	132	102	234	
17	21	21	11	16	16	19	17	14	13	7	7	191	170	361	
14	21	10	11	11	16	18	22	10	29	15	19	166	199	365	
22	28	31	29	29	24	28	27	34	26	24	24	322	290	612	
30	22	10	14	15	4	26	29	16	10	24	17	207	165	372	
17	7	5	3	12	3	15	9	5	4	4	14	87	73	160	
11	5	9	10	9	5	6	6	7	7	5	6	75	80	155	
8	8	3	5	3	4	10	4	5	3	3	5	49	45	94	
6	9	9	5	5	5	11	12	15	10	6	6	113	112	225	
15	14	16	13	11	12	19	16	10	19	15	18	158	150	308	
19	15	18	18	22	10	13	8	12	8	15	13	170	145	315	
12	9	3	7	6	8	15	14	7	11	18	9	134	145	279	
18	17	14	26	18	15	19	18	19	10	16	25	252	252	504	
15	11	10	11	12	3	12	10	8	5	10	10	117	107	224	
30	34	19	22	35	32	24	26	23	28	30	23	303	350	653	
4	5	8	4	1	3	4	3	13	13	3	6	72	70	142	
27	22	19	10	10	21	23	22	11	15	18	20	219	220	439	
24	26	31	30	20	18	35	40	33	35	33	21	371	342	713	
8	2	18	14	11	14	16	6	23	23	22	26	198	189	387	
17	16	17	18	13	14	20	22	8	8	13	9	167	137	304	
6	6	4	2	9	4	5	7	10	5	7	7	105	83	188	
18	28	13	14	13	10	29	24	19	14	10	3	194	187	381	
21	13	14	17	8	11	17	17	22	19	15	17	230	203	433	
2	1	2	8	6	6	6	5	1	3	2	3	23	34	57	
7	4	2	3	6	6	9	14	7	9	13	7	67	61	128	
27	21	34	36	21	32	23	24	20	16	24	25	356	324	680	
15	20	12	11	8	14	11	9	13	14	14	13	140	148	288	
11	6	4	1	7	2	11	6	4	5	7	9	90	61	151	
30	23	33	27	29	34	24	26	19	17	14	16	245	245	490	
12	11	17	18	20	26	10	12	10	15	26	21	205	193	398	
3	1	4	2	5	3	2	2	4	2	5	3	50	35	85	
18	23	24	17	13	20	30	26	38	23	29	33	361	339	700	
13	17	15	7	9	9	11	6	14	4	10	4	110	93	203	
60	35	39	28	55	35	57	53	42	40	40	41	572	481	1,053	
17	12	19	18	16	20	16	11	17	18	34	28	266	259	525	
13	9	11	6	8	9	5	11	9	15	9	13	119	112	231	
17	18	15	24	7	12	29	18	28	25	20	24	204	199	403	
18	17	7	10	12	14	40	23	23	17	13	10	209	173	382	
22	43	52	30	37	33	35	38	40	39	45	31	454	411	865	
11	13	14	12	12	10	14	15	16	14	10	12	154	145	299	
12	12	9	8	6	6	20	10	14	16	10	8	128	131	259	
23	18	11	8	11	9	14	18	10	12	13	15	138	135	273	
1,787	1,603	1,543	1,394	1,435	1,377	1,976	1,774	1,729	1,553	1,661	1,580	19,883	18,427	38,310	

TAB

BIR

*Year Ending September 30, 1886, Sho*

COUNTIES.	No. of Births.	NUMBER OF CHILD BORN TO THIS MOTHER.										
		1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.
Adams . . . . .	249	65	40	35	28	27	20	9	10	6	3	3
Allen . . . . .	713	170	138	113	65	54	29	33	17	9	8	3
Bartholomew . . . . .	559	144	123	83	54	49	31	30	16	11	9	2
Benton . . . . .	228	48	38	39	30	22	22	11	6	6	3	2
Blackford . . . . .	214	47	48	47	34	17	8	7	5	3	.	2
Boone . . . . .	534	130	110	84	45	57	41	25	17	11	10	6
Brown . . . . .	187	42	35	32	19	18	14	13	5	2	3	3
Carroll . . . . .	520	102	115	77	80	49	41	23	16	10	6	4
Cass . . . . .	443	120	86	65	44	39	23	15	9	5	6	1
Clark . . . . .	392	97	90	51	59	30	23	19	8	5	4	2
Clay . . . . .	470	102	87	80	46	46	35	29	23	7	9	3
Clinton . . . . .	174	41	37	32	19	17	3	6	10	4	1	2
Crawford . . . . .	205	58	35	33	17	11	19	10	5	5	3	3
Daviess . . . . .	497	115	83	73	65	53	33	35	18	9	7	3
Dearborn . . . . .	387	104	68	48	51	38	18	22	17	7	3	3
Decatur . . . . .	398	84	74	64	56	34	27	16	10	15	3	5
Dekalb . . . . .	253	62	59	48	31	13	10	5	12	4	2	.
Delaware . . . . .	745	194	148	125	81	54	55	32	29	13	4	6
Dubois . . . . .	400	72	66	45	57	45	24	31	27	14	12	7
Elkhart . . . . .	716	206	139	126	70	45	41	23	22	11	8	5
Fayette . . . . .	222	60	47	32	30	22	10	8	8	4	2	2
Floyd . . . . .	521	143	102	86	54	39	28	22	15	12	8	4
Fountain . . . . .	357	92	70	59	40	28	20	19	12	9	3	3
Franklin . . . . .	190	43	36	28	26	11	15	12	5	3	1	2
Fulton . . . . .	210	45	52	35	20	20	13	14	2	3	5	2
Gibson . . . . .	465	99	84	73	63	52	29	26	20	7	2	7
Grant . . . . .	369	93	92	53	52	22	25	15	4	5	3	1
Greene . . . . .	373	103	65	54	45	31	32	17	12	6	6	4
Hamilton . . . . .	748	184	142	130	86	70	43	34	17	20	5	5
Hancock . . . . .	490	111	82	85	68	39	34	34	16	7	4	4
Harrison . . . . .	470	98	85	81	49	37	34	26	12	18	15	3
Hendricks . . . . .	458	81	106	72	51	49	31	20	18	9	11	4
Henry . . . . .	503	143	95	85	60	43	27	17	14	5	4	5
Howard . . . . .	420	104	93	60	56	44	24	8	10	5	6	6
Huntington . . . . .	575	151	123	99	68	48	28	22	14	12	5	4
Jackson . . . . .	536	146	80	87	56	44	44	27	21	16	11	6
Jasper . . . . .	211	51	50	35	27	11	10	11	11	1	2	2
Jay . . . . .	519	129	97	77	66	41	36	23	22	2	10	3
Jefferson . . . . .	206	55	40	29	20	20	13	10	8	5	4	2
Jennings . . . . .	257	53	50	36	40	19	17	12	9	6	3	1

LE B.

THS.

*wing Grouped Ages of Parents, etc.*

GROUPED AGES OF PARENTS.																		
12th & over.		Not Rep'd.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 and over.		Not Rep'd.	
			F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	F.	F.	M.		
3	2	1	33	106	110	84	72	40	29	12	2	1	..	5	3			
3	7	1	40	220	341	246	201	86	30	16	..	1	..	143	101			
3	5	2	49	231	309	217	174	81	24	13	1	1	..	14	2			
4	2	11	10	83	125	98	73	40	17	2	..	1	..	4	3			
4	1	11	33	51	69	77	71	50	34	22	3	3	..	..	4			
3	..	4	41	248	295	171	163	84	29	22	..	..	..	5	6			
1	..	1	32	81	90	71	53	21	9	5	..	1	..	8	3			
4	3	1	44	179	265	228	184	84	23	16	..	1	1	10	4			
2	37	..	38	136	186	150	108	49	18	8	..	2	..	98	93			
1	3	..	30	167	224	164	121	52	15	6	..	..	..	3	2			
8	1	3	48	213	272	183	122	59	24	9	1	..	..	3	3			
3	3	..	19	79	105	63	38	20	8	2	..	..	..	10	4			
1	4	..	24	80	107	75	51	26	12	6	..	4	..	13	11			
3	6	3	50	168	256	204	156	59	17	12	..	5	..	48	18			
1	11	..	14	163	232	150	80	31	42	20	4	3	..	18	15			
6	5	8	22	140	173	159	155	57	34	12	1	5	..	17	13			
1	9	5	27	68	120	98	71	55	22	13	..	1	..	13	13			
6	8	9	90	319	390	267	227	116	25	5	..	1	2	26	13			
2	3	1	20	134	203	165	138	69	26	9	..	1	..	21	13			
4	31	3	70	277	350	232	174	106	54	13	..	12	..	73	68			
1	..	..	19	99	130	82	57	28	16	11	..	..	..	2	..			
3	14	3	37	223	292	206	156	67	30	11	..	1	..	10	6			
2	5	..	26	144	186	137	109	46	14	10	..	3	..	17	22			
5	5	1	12	66	93	70	58	27	13	11	..	..	..	15	14			
1	1	13	11	92	73	64	76	27	32	12	14	1	..	1	4			
1	11	3	41	184	262	175	138	70	17	16	..	4	..	13	7			
2	7	3	41	149	178	119	89	68	51	17	..	..	..	13	10			
1	..	1	52	165	198	131	99	48	22	15	..	3	..	10	2			
6	15	6	77	298	414	298	201	98	32	27	..	3	..	18	24			
3	8	1	39	193	273	196	148	72	22	14	..	..	..	14	8			
5	10	2	32	156	239	150	110	99	68	33	8	7	1	22	13			
7	5	1	23	170	250	172	145	81	37	24	..	1	..	9	3			
7	1	6	51	215	301	192	129	70	22	13	..	2	..	5	..			
6	5	3	51	156	216	171	125	62	14	6	..	1	..	21	14			
3	5	1	44	240	325	220	173	86	24	10	..	3	..	15	9			
6	6	2	50	200	261	198	171	85	37	22	..	3	..	26	17			
2	..	1	15	80	118	85	43	34	15	9	..	1	..	1	20			
10	9	2	48	196	259	199	152	80	40	13	..	2	..	27	20			
1	..	2	9	69	108	79	67	36	10	6	7	8	..	6	5			
4	11	1	14	72	112	86	80	61	35	20	2	2	1	14	14			

TABLE B—

COUNTIES.	No. of Births.	NUMBER OF CHILD BORN TO THIS MOTHER.										
		1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.
Johnson . . . . .	422	96	92	58	51	53	30	16	7	8	4	3
Knox . . . . .	419	93	77	65	59	42	30	15	13	5	11	2
Kosciusko . . . . .	291	73	66	55	27	18	16	13	14	5	2	2
Lagrange . . . . .	250	83	60	40	23	13	8	4	3	2	1	1
Lake . . . . .	306	88	49	47	36	27	14	10	14	10	4	4
Laporte . . . . .	605	150	130	83	71	51	39	20	20	21	8	3
Lawrence . . . . .	323	62	62	52	47	34	20	13	10	9	3	1
Madison . . . . .	851	197	159	156	119	70	42	42	27	22	9	10
Marion . . . . .	2,583	570	502	384	312	246	163	106	79	52	34	25
Marshall . . . . .	287	81	55	38	30	27	18	11	13	4	2	2
Martin . . . . .	234	50	35	27	41	17	27	11	12	7	5	1
Miami . . . . .	352	85	77	57	55	26	16	12	9	9	6	2
Monroe . . . . .	360	99	66	48	46	35	24	16	10	6	6	2
Montgomery . . . . .	609	166	129	83	82	48	24	24	17	9	6	3
Morgan . . . . .	370	91	82	74	28	33	21	9	13	11	4	3
Newton . . . . .	158	38	33	21	17	16	9	11	5	2	1	1
Noble . . . . .	154	42	37	19	11	17	10	6	4	3	2	1
Ohio . . . . .	90	21	24	10	9	8	8	4	5	3	2	1
Orange . . . . .	220	47	38	37	26	20	18	11	11	4	4	3
Owen . . . . .	302	71	59	56	34	19	20	14	6	8	4	3
Parke . . . . .	310	87	59	40	36	28	14	13	15	10	6	1
Perry . . . . .	377	57	50	56	37	30	11	10	8	4	2	2
Pike . . . . .	493	100	90	90	62	47	32	34	12	14	10	8
Porter . . . . .	223	68	44	37	20	20	10	12	1	4	5	4
Posey . . . . .	642	152	145	85	71	64	40	32	17	10	10	3
Pulaski . . . . .	141	32	30	22	15	17	8	5	4	3	5	7
Putnam . . . . .	433	109	88	67	45	28	28	31	18	5	8	3
Randolph . . . . .	702	162	153	117	89	63	48	37	19	12	7	3
Ripley . . . . .	387	96	60	58	51	36	23	25	16	8	6	3
Rush . . . . .	302	72	66	62	31	23	16	12	8	3	3	2
Scott . . . . .	188	38	44	28	20	19	13	9	8	4	2	2
Shelby . . . . .	379	110	85	49	47	24	29	8	12	6	4	1
Spencer . . . . .	425	117	81	62	46	39	25	23	14	11	4	4
Starke . . . . .	56	13	6	11	7	3	3	3	2	3	2	1
Steuben . . . . .	125	45	23	20	14	7	5	4	2	2	1	1
St. Joseph . . . . .	672	142	147	92	91	66	37	23	23	11	15	6
Sullivan . . . . .	283	82	46	48	29	27	18	10	8	4	4	2
Switzerland . . . . .	147	31	33	20	12	17	10	10	6	1	4	3
Tippecanoe . . . . .	495	121	103	61	53	40	39	28	13	8	6	7
Tipton . . . . .	391	92	71	57	41	37	32	21	17	12	7	3
Union . . . . .	84	24	15	12	11	10	5	3	3	2	2	1
Vanderburgh . . . . .	687	157	155	110	68	49	47	35	22	20	12	10
Vermillion . . . . .	200	55	33	43	22	14	15	5	5	6	1	2
Vigo . . . . .	1,038	287	224	159	118	79	71	36	35	11	8	6
Wabash . . . . .	524	79	103	109	73	52	34	24	19	9	5	4
Warren . . . . .	229	66	42	48	27	19	7	8	19	1	3	1
Warrick . . . . .	400	104	80	52	35	40	21	16	19	9	6	6
Washington . . . . .	380	83	79	54	45	24	33	24	10	7	4	5
Wayne . . . . .	853	239	173	147	100	69	40	33	29	15	7	8
Wells . . . . .	299	61	69	45	50	30	19	15	7	3	4	1
White . . . . .	258	79	41	40	30	23	22	8	5	4	2	1
Whitley . . . . .	270	74	49	45	40	21	20	8	5	5	4	1
Total . . . . .	37,853	9,224	7,530	5,952	4,493	3,291	2,362	1,708	1,201	736	513	304
Plurality Births . . . . .	...	...	...	...	...	...	...	...	...	...	...	...



Continued.

GROUPED AGES OF PARENTS.																	
12th & over.	Not Rep'd.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 and over.	Not Rep'd.		
		F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.		F.	M.	
3	9	1	37	191	232	153	126	49	21	11	2	3	..	..	14	4	
4	5	3	22	147	229	160	119	62	23	16	..	1	..	..	33	26	
1	4	2	30	144	171	95	78	44	11	5	..	..	..	..	1	1	
1	3	3	19	83	123	86	67	37	10	9	1	..	..	..	35	30	
3	3	5	63	147	162	114	65	28	7	1	..	1	..	..	10	9	
5	7	1	41	239	324	225	170	84	39	25	1	1	..	..	30	30	
2	2	2	18	111	169	127	102	43	13	11	1	1	..	..	28	20	
6	18	6	98	356	457	339	253	105	41	27	..	2	..	..	16	2	
1	113	18	152	943	1,141	1,130	994	245	74	30	1	3	..	..	214	221	
1	3	1	36	128	148	110	90	36	11	4	..	3	..	..	5	2	
1	1	3	30	92	116	79	56	40	9	11	1	2	..	..	7	22	
4	12	3	30	167	206	115	92	50	15	5	..	1	..	..	14	9	
3	3	8	44	130	193	146	98	52	24	8	..	2	..	..	14	1	
4	12	3	62	235	303	225	185	103	36	22	..	1	..	..	23	23	
1	2	3	35	160	197	123	108	41	12	9	..	4	2	..	28	18	
3	7	1	9	40	62	58	54	36	15	5	..	1	..	..	17	18	
3	3	1	8	60	93	48	38	30	7	2	..	..	..	..	13	8	
1	1	3	9	38	49	29	23	17	7	4	..	..	..	..	2	2	
1	6	3	23	72	103	80	80	30	10	9	..	1	..	..	25	4	
3	11	..	27	134	162	94	66	47	20	12	..	3	..	..	12	27	
4	2	7	28	95	149	117	89	48	22	9	..	2	1	..	38	22	
5	2	1	15	147	190	73	46	21	6	7	1	..	..	..	28	19	
1	3	2	48	164	222	167	135	105	72	29	9	8	..	..	18	7	
3	3	4	15	76	126	86	56	39	21	12	1	1	..	..	9	4	
3	21	4	59	268	373	246	176	75	25	25	..	1	..	..	23	9	
3	3	4	16	52	71	50	36	13	8	8	1	1	..	..	13	9	
3	2	6	38	166	225	162	140	70	26	22	..	1	..	..	10	4	
2	1	6	74	288	393	279	201	94	29	17	..	1	1	..	15	5	
5	3	3	50	127	157	141	110	88	63	22	7	6	..	..	..	..	
3	3	1	17	124	175	116	96	41	12	11	..	..	..	..	9	2	
1	12	31	69	88	62	44	35	23	8	..	..	1	..	..	1	2	
1	5	9	32	165	191	130	119	27	15	10	..	5	..	..	23	22	
3	2	38	179	248	164	127	58	12	16	..	..	4	..	..	2	..	
1	3	5	17	24	15	13	10	8	6	..	..	..	..	..	7	6	
1	5	12	71	75	18	15	15	11	4	..	..	..	..	..	17	12	
8	19	49	253	363	294	228	93	25	20	..	..	3	..	..	9	7	
3	6	7	38	111	125	77	69	47	30	22	4	..	..	..	19	17	
3	3	1	4	51	70	46	44	22	9	5	..	1	..	..	21	20	
1	14	35	149	255	188	132	81	27	12	..	..	..	..	..	55	36	
3	5	1	48	162	202	132	109	63	30	12	..	4	..	..	17	2	
5	1	9	40	43	33	26	9	5	..	..	..	..	..	..	1	41	
10	2	45	257	364	259	195	94	40	23	2	..	..	..	..	52	41	
2	9	17	64	100	73	65	54	15	4	1	1	1	..	..	3	2	
10	4	101	425	555	374	330	154	42	31	..	..	4	1	..	45	10	
2	12	4	61	183	282	196	173	96	26	29	..	14	1	..	1	2	
1	4	1	26	82	115	92	60	24	8	6	..	..	..	..	24	20	
8	3	37	179	222	113	114	71	21	15	..	..	1	..	..	18	6	
7	2	3	37	145	173	113	115	61	27	15	..	1	1	..	41	28	
3	2	6	69	343	491	340	256	128	37	25	..	2	1	..	8	..	
3	..	59	103	103	116	106	59	31	21	..	..	..	..	..	..	..	
3	..	22	94	137	117	78	31	7	6	..	..	..	..	..	10	14	
..	1	21	108	150	117	78	33	17	..	..	..	1	..	..	3	4	
297	699	242	..	14,685	..	14,174	..	5,478	..	1,208	..	180	14	..	1,872	..	..
..	..	..	3,375	..	19,587	..	11,208	..	2,198	..	76	..	..	..	..	1,414	..

TABLE C.

## BIRTHS.

COUNTIES.	No. of Children.	COLORED.				NATIONALITY OF PARENTS.						STILL BIRTHS.		PLURALITY BIRTHS.		ILLUSTRATIVE MATR.	
		White.		Colored.		American.		Foreign.		Not Reported.		Male.	Female.	Male.	Female.	Male.	Female.
		Male.	Female.	Male.	Female.	Father.	Mother.	Father.	Mother.	Father.	Mother.						
Adams	251	117	134	1	2	221	232	27	16	1	1	4	3	4	4	7	8
Allen	720	385	332	4	3	366	443	208	160	139	110	10	8	5	10	7	11
Bartholomew	564	266	291	1	1	494	511	35	14	30	34	4	12	5	6	3	3
Benton	233	124	107	2	1	184	197	42	30	2	1	4	2	5	6	9	8
Blackford	220	113	107	1	1	214	214	2	4	1	1	3	4	6	6	1	1
Boone	539	251	287	1	1	532	530	2	4	1	1	3	4	3	6	1	8
Brown	187	107	80	1	1	155	156	1	1	31	30	1	1	13	7	3	1
Carroll	530	277	253	2	1	506	510	14	10	17	19	8	6	2	10	2	3
Cass	452	244	205	2	1	371	384	55	40	40	19	6	3	8	10	2	1
Clark	392	196	173	12	11	316	361	70	24	17	7	3	3	5	7	1	1
Clay	476	234	241	2	1	329	378	124	83	17	9	2	2	2	4	1	1
Clinton	176	96	78	2	1	159	162	4	2	11	10	3	2	1	4	1	1
Crawford	208	103	103	3	2	201	201	3	10	1	4	3	4	1	1	3	2
Darvess	503	255	243	3	2	411	402	15	10	71	85	7	4	5	5	4	5
Dearborn	391	185	206	2	2	297	322	63	43	27	22	5	4	2	3	2	2
Decatur	399	205	190	2	2	347	356	25	10	26	32	3	1	6	3	3	3
Dekalb	256	133	123	5	3	215	225	24	15	14	13	3	23	7	13	8	7
Delaware	755	354	393	5	3	724	733	19	19	2	2	13	3	7	7	1	1
Dubois	405	211	191	3	2	346	371	37	21	17	8	3	6	8	2	3	5
Elkhart	731	379	348	2	2	501	529	89	60	126	127	20	17	14	16	10	11
Fayette	226	131	90	3	2	198	209	21	13	3	3	2	1	4	4	1	1
Floyd	530	261	258	5	6	411	445	90	64	20	16	4	4	11	7	3	2
Fountain	392	183	179	1	1	325	333	23	15	9	9	6	11	2	2	2	2
Franklin	192	96	96	1	1	159	175	20	6	11	9	3	2	4	2	2	2
Fulton	213	129	84	1	1	208	208	2	2	1	1	1	1	1	1	1	1

Gibson	474	228	221	14	11	433	446	20	8	12	11	10	10	10	47	7	4
Grant	374	180	189	3	3	288	286	5	2	76	71	1	1	1	4	3	4
Greene	376	212	160	1	1	369	372	8	5	3	10	17	10	4	1	1	3
Hamilton	394	342	394	12	9	732	733	16	6	16	19	11	6	6	2	4	2
Hancock	485	252	243	7	2	459	465	26	9	34	31	11	6	1	4	2	4
Harrison	473	282	282	1	1	410	430	18	9	34	31	11	6	1	4	2	4
Hendricks	464	228	226	5	5	436	450	19	5	3	3	10	5	4	8	1	1
Henry	506	255	240	5	6	496	506	7	3	24	19	4	3	3	1	4	3
Howard	427	244	177	3	3	392	398	4	3	24	19	4	3	3	1	4	3
Huntington	582	296	286	11	11	525	547	39	20	11	8	10	7	9	17	4	4
Jackson	550	276	274	1	1	476	502	40	20	20	14	1	16	4	4	2	7
Jasper	213	108	105	1	1	195	204	16	7	1	14	1	4	1	4	2	7
Jay	525	277	243	1	4	488	504	16	29	15	7	12	6	6	6	6	3
Jefferson	207	89	105	12	1	177	177	29	8	15	7	12	6	6	6	6	3
Jennings	261	137	111	9	4	244	253	9	3	8	2	2	2	2	3	5	1
Johnson	430	232	190	5	3	401	413	9	1	12	6	1	2	7	3	4	4
Knox	425	218	135	7	5	316	316	11	10	92	93	2	5	5	5	4	4
Kosciusko	296	156	139	1	1	291	310	11	10	1	1	1	2	7	2	2	2
Lagrange	253	130	123	1	1	229	229	10	6	11	15	4	3	3	3	3	1
Lake	307	170	137	1	1	177	211	116	88	13	7	13	8	3	1	1	2
Laporte	608	305	302	1	1	278	341	296	244	31	20	8	8	3	1	4	4
Lawrence	324	158	165	1	1	299	308	6	5	18	15	4	4	1	1	4	3
Madison	861	469	385	3	3	812	840	27	11	12	15	11	13	13	1	7	8
Marion	2,606	1,263	1,151	119	73	1,973	2,148	482	337	128	96	19	13	13	24	25	23
Marshall	289	150	139	1	1	249	252	24	22	14	13	1	1	2	2	1	1
Martin	234	132	102	1	1	227	230	4	4	9	9	2	5	6	1	1	1
Miami	361	188	170	5	4	309	317	34	26	10	7	2	6	6	11	5	4
Monroe	395	161	136	4	8	341	351	9	2	31	23	3	3	3	3	4	4
Montgomery	612	318	282	4	8	552	571	26	15	3	23	3	3	3	3	4	4
Morgan	372	215	165	2	2	363	365	4	2	3	3	3	3	3	3	3	3
Newton	160	87	73	1	1	115	116	30	22	13	20	3	1	2	2	2	3
Noble	155	75	79	1	1	134	145	10	10	10	8	1	1	2	2	2	1
Ohio	94	45	43	4	2	80	80	10	10	10	8	1	1	2	2	2	5
Orange	225	112	111	1	1	220	230	2	1	1	2	3	1	2	4	4	3
Owen	308	158	149	1	1	300	301	8	6	6	3	3	3	3	4	4	5
Parke	315	166	143	4	2	302	304	8	6	6	3	3	3	3	4	4	6
Perry	279	133	144	1	1	234	250	39	24	4	14	3	3	2	3	3	8
Pike	504	250	232	2	2	463	476	9	3	21	8	14	14	14	3	4	1
Porter	224	117	107	1	1	149	163	65	52	9	8	3	3	3	3	4	1
Posey	653	299	347	4	3	564	589	66	38	12	5	9	9	9	1	1	1
Pulaski	142	72	70	1	1	125	128	11	8	5	5	5	5	5	5	5	5
Putnam	439	211	211	8	9	410	424	17	9	6	6	6	6	6	6	6	6

\* Triplet. † Mother 12 years of age.

TABLE C—Continued.

COUNTIES.	No. of Children.	COLOR.				NATIONALITY OF PARENTS.						STILL BIRTHS.		PLURALITY BIRTHS.		LIVELY BIRTHS.	
		White.		Colored.		American.		Foreign.		Not Reported.		Male.	Female.	Male.	Female.	Male.	Female.
		Male.	Female.	Male.	Female.	Father.	Mother.	Father.	Mother.	Father.	Mother.						
Randolph . . . . .	713	368	333	3	9	669	689	23	10	10	3	7	6	8	*12	5	4
Ripley . . . . .	387	198	189	..	..	241	241	146	146	..	..	1	..	..	..	..	..
Rush . . . . .	304	164	131	..	..	282	282	9	8	11	2	2	..	1	..	..	..
Scott . . . . .	186	105	83	..	..	186	187	2	1	..	..	..	..	..	..	..	..
Shelby . . . . .	381	186	185	..	..	261	267	8	5	110	107	..	..	2	..	..	..
Spencer . . . . .	443	224	192	6	11	393	420	32	5	..	..	15	1	11	5	1	5
Starke . . . . .	357	23	34	..	..	..	..	..	..	..	..	2	..	..	2	..	..
Steuben . . . . .	128	67	61	..	..	43	46	6	3	7	7	..	..	..	..	..	..
St. Joseph . . . . .	680	354	319	2	5	107	111	14	..	14	14	15	9	2	14	..	..
Sullivan . . . . .	288	139	148	1	..	403	446	282	219	7	56	..	..	7	3	1	1
Switzerland . . . . .	151	88	60	2	..	236	237	..	..	12	12	3	..	4	4	1	..
Tippecanoe . . . . .	490	245	245	..	..	132	133	3	2	47	56	8	4	4	6	3	..
Tipton . . . . .	398	205	191	..	..	341	333	94	96	50	56	..	..	..	..	..	..
Union . . . . .	85	48	34	2	2	349	370	16	8	26	13	5	6	7	7	2	6
Vanderburgh . . . . .	700	339	319	22	20	84	82	..	..	12	..	15	21	11	15	9	2
Vermillion . . . . .	203	110	91	2	5	500	583	175	96	4	1	4	..	2	4	1	..
Vigo . . . . .	1,033	580	476	12	..	191	198	103	103	12	3	23	14	14	16	13	13
Wabash . . . . .	525	266	259	..	..	865	935	161	31	6	..	9	11	1	1	2	..
Warren . . . . .	231	119	112	..	..	499	490	19	81	..	..	3	2	..	..	..	..
Warrick . . . . .	403	199	198	5	1	218	222	8	5	3	2	3	2	6	4	3	2
Washington . . . . .	382	219	173	..	..	370	382	21	13	9	5	2	1	4	..	3	3
Wayne . . . . .	885	431	394	28	17	375	379	5	..	..	..	3	3	3	6	6	5
Wells . . . . .	299	154	145	..	..	716	753	126	94	11	1	23	16	9	14	15	16
White . . . . .	259	128	131	..	..	262	262	37	37	..	..	..	..	..	..	..	..
Whitley . . . . .	273	138	135	..	..	243	250	15	7	8	..	1	3	5	1	2	1
Total . . . . .	38,210	19,499	18,133	394	294	32,449	33,809	3,799	2,628	1,624	1,415	496	408	464	442	361	259

\* Two sets triplets. † Triplets.

### MARRIAGES.

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The whole number of marriages reported for the year was 17,657; 17,232 of the contracting parties were white and 425 colored; 14,990 grooms and 15,409 brides were American; 1,468 grooms and 1,039 brides were foreign born. The nationality of 1,199 grooms and that of 1,209 brides was not reported.



Franklin	161	20	16	22	16	9	13	11	11	15	10	161	145	144	14	16	2	1
Kulton	143	16	23	15	13	6	2	8	10	9	17	143	140	141	12	2	..	1
Gibson	189	17	19	23	17	10	13	14	10	20	26	179	179	185	12	4	..	..
Grant	248	20	20	27	13	18	12	16	16	31	16	247	241	210	5	..	2	1
Greene	210	21	15	24	13	33	10	10	15	12	14	208	210	210	1	1	2	4
Hamilton	234	39	21	13	26	13	13	10	10	18	24	227	231	229	..	..	..	..
Hancock	136	18	21	14	2	10	13	11	8	12	11	136	129	134	7	2	8	8
Harrison	209	23	24	12	16	22	11	6	18	5	35	204	194	196	1	6	3	2
Henricks	166	14	16	13	14	8	11	8	5	16	12	161	162	163	1	1	..	..
Henry	148	14	17	10	19	16	11	9	24	24	17	147	147	148	1	..	..	..
Howard	193	35	14	19	17	15	11	9	19	19	22	191	192	193	1	6	1	1
Huntington	217	27	19	24	23	11	14	16	10	14	20	217	207	210	9	..	..	..
Jackson	216	36	17	8	22	10	15	3	18	16	12	212	212	212	12	3	1	1
Jasper	78	25	6	10	11	10	3	3	26	1	14	72	65	72	12	5	3	2
Jay	213	18	39	29	12	3	12	5	19	19	2	211	200	206	10	5	1	1
Jefferson	221	18	19	18	18	21	16	12	17	14	25	221	101	101	9	2	120	120
Jennings	144	14	15	5	12	7	9	11	5	14	18	140	185	142	1	1	75	75
Johnson	156	30	7	19	10	14	7	11	10	16	22	156	80	80	1	..	..	..
Knox	234	26	23	36	14	16	15	15	19	18	14	228	174	175	4	3	56	56
Kosciusko	262	29	23	35	25	25	14	13	21	14	16	262	244	246	4	3	9	8
Lagrange	86	11	15	6	4	7	7	2	4	8	11	96	80	80	5	3	1	3
Lake	149	16	15	4	19	10	13	12	6	5	16	147	98	101	50	46	1	2
Laporte	234	28	24	16	23	23	20	16	14	16	18	234	172	172	59	59	3	3
Lawrence	113	7	10	5	13	8	11	6	20	8	2	111	108	111	5	2	..	..
Madison	281	20	24	33	20	26	22	13	14	24	38	281	278	279	3	2	..	..
Marion	1015	61	87	58	94	66	67	14	74	86	122	965	941	991	158	110	16	14
Marshall	172	17	21	16	13	7	14	15	11	11	19	172	160	166	10	5	2	1
Martin	114	17	11	3	25	6	6	4	16	9	7	114	107	110	7	4	1	1
Miami	189	17	20	10	9	20	11	11	9	12	9	189	182	180	6	8	..	..
Monroe	122	12	9	11	10	10	5	11	11	15	9	119	120	120	2	2	..	..
Montgomery	243	6	29	18	19	16	22	15	15	19	32	243	243	243	3	..	..	..
Morgan	133	3	9	7	15	11	11	9	15	19	16	133	133	133	..	..	..	..
Newton	66	14	12	2	7	7	2	1	5	7	3	65	45	52	14	8	6	5
Noble	218	24	19	19	20	31	16	12	8	4	21	218	204	213	13	6	1	..
Ohio	51	9	4	4	1	2	3	2	2	6	3	50	51	51	..	..	..	..
Orange	117	9	13	12	7	17	8	8	7	8	11	115	82	82	..	..	36	36
Owen	112	10	8	12	12	15	4	4	6	8	9	112	112	112	..	..	..	..
Parke	153	21	16	16	13	12	7	10	11	9	9	150	134	137	3	..	16	16
Perry	143	13	17	8	15	6	10	13	13	13	18	135	132	139	11	2	12	2
Pike	166	9	9	12	15	14	5	16	9	8	14	164	152	152	2	34	6	14
Porter	124	12	13	9	16	11	4	8	2	8	21	86	86	86	5	..	..	..
Posey	220	23	28	19	14	14	10	8	11	19	31	199	215	215	5	3	1	1
Pulaski	98	9	10	15	8	12	7	4	4	4	8	98	88	88	15	10	..	..
Putnam	164	16	16	25	24	6	8	3	10	11	19	158	160	161	4	3	..	..





TABLE B.

## MARRIAGES.

Year Ending September 30, 1885.

COUNTIES.	Total.	GROUPED AGES.											
		Under 20.		20 to 25.		25 to 30.		30 to 40.		40 to 50.		50 to 60.	
		Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.
Adams.	146	6	52	63	58	51	27	19	6	4	2	1	1
Allen.	567	1	102	168	241	172	107	82	60	31	15	17	6
Bartholomew.	205	1	47	68	57	64	39	43	17	13	8	4	1
Benton.	89		18	32	47	32	10	15	4	3	3	1	1
Blackford.	75	1	31	29	26	30	11	11	3	3	3	1	1
Boone.	251	2	81	109	103	79	32	40	20	8	10	8	4
Brown.	89												
Carroll.	182	6	39	62	62	62	28	30	23	9	4	8	5
Cass.	277	4	90	102	103	84	59	57	20	21	8	3	1
Clark.	259		11	16	32	29	13	9	3	1	1	1	1
Clay.	211	5	82	103	81	64	29	22	9	11	8	9	2
Clinton.	189	1	51	61	68	66	24	28	12	8	8	4	1
Crawford.	141	11	61	54	44	33	10	22	15	4	2	3	1
Davies.	178	3	48	79	85	64	26	16	14	14	5	1	1
Dearborn.	205												
Decatur.	159	3	45	56	60	46	21	24	23	19	1	2	1
Dekalb.	188	4	38	67	85	68	43	33	18	1	1	3	6
Delaware.	245	4	69	109	111	71	36	45	23	11	5	3	1
Dubuois.	166	3	46	64	70	56	30	28	14	13	4	1	1
Elkhart.	212	6	47	71	101	88	43	26	12	8	4	1	1
Fayette.	69		7	24	37	23	13	14	9	6	3	1	1
Floyd.	218	1	34	76	88	62	42	32	15	15	8	2	2

TABLE B—Continued.

COUNTIES.	Total.	GROUPED AGES.											
		Under 20.		20 to 25.		25 to 30.		30 to 40.		40 to 50.		50 to 60.	
		Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.
Fountain	215	1	3	74	90	78	32	37	15	15	2	5	2
Franklin	161	3	28	68	76	50	31	26	19	9	1	2	4
Fulton	143	3	30	45	44	55	37	23	15	11	1	4	10
Gibson	189	6	50	73	80	65	34	25	14	9	1	1	4
Grant	248	1	81	112	105	76	29	38	19	17	..	..	9
Greene	210	3	76	76	81	63	23	36	16	13	1	7	5
Hamilton	234	4	79	99	90	65	30	39	25	13	1	4	4
Hancock	136	1	37	50	62	47	19	20	12	8	..	3	4
Harrison	209	1	44	73	94	90	48	19	19	5	3	5	3
Hendricks	166	1	46	55	59	52	31	34	14	6	3	3	3
Henry	148	5	36	56	69	44	23	27	9	5	2	1	1
Howard	193	2	65	74	79	65	20	26	14	13	1	5	4
Huntington	217	5	52	85	96	72	28	37	40	10	2	3	3
Jackson	216	3	78	92	83	69	40	28	14	8	1	2	3
Jasper	78	2	24	25	34	32	14	13	4	3	..	1	1
Jay	213	5	79	75	87	75	22	38	15	10	1	2	1
Jefferson	221	..	..	..	..	..	..	..	..	..	..	..	221
Jennings	144	2	33	32	49	56	32	40	16	9	1	3	8
Johnson	156	1	17	25	23	17	11	14	6	3	..	3	9
Knox	234	3	55	62	83	88	57	42	16	21	1	2	11
Kosciusko	262	5	83	122	110	87	37	32	14	17	1	5	3
Lake	86	..	19	18	15	33	14	23	8	11	..	2	2
Lafayette	149	..	34	41	65	60	31	29	15	11	..	1	..
Laporte	234	1	46	76	113	95	45	38	20	13	1	5	3
Lawrence	113	1	30	38	46	35	20	18	8	2	..	6	4
Madison	281	4	85	116	112	87	47	45	22	9	1	9	8
Marion	1015	12	201	303	300	303	313	260	116	63	3	16	21
Marshall	172	5	61	76	71	76	20	20	10	13	..	2	..
Martin	114	2	44	52	46	33	18	19	5	5	1	3	..

## MARRIAGES.

231

[illegible]

## THE INFLUENCE OF THE MIND OVER PHYSICAL DISEASES.

BY G. M. VAN AUDALL, M. D., OF JAMESTOWN, INDIANA.

[Read before the Boone County Medical Society, Lebanon, Ind., August 3, 1886.]

Perhaps there is no subject in medicine so little thought of, or treated of, by the medical profession, and especially medical writers, as the one under our present consideration.

The study of this subject brings us, therefore, in contact with metaphysical science, and some of its fundamental dogmas we have to consider. Nearly all philosophers who have cultivated, in recent times, that branch of knowledge, have viewed with apprehension the rapid advance of our profession, foreseeing that it would attempt the final solution of problems which have exercised the ingenuity of the last twenty centuries. In this they are not mistaken. Certainly it is desirable that some new method should be introduced which may give point and precision to whatever metaphysical truths exist and enable us to distinguish, separate and dismiss what are only vain and empty speculation.

So far from philosophy being a forbidden domain to the physician, it may be asserted that the time has now come when no one is entitled to express an opinion in philosophy except he has first studied metaphysics.

It has hitherto been to the detriment of truth that these processes of positive investigation have been repudiated.

If from the construction of the human brain we may demonstrate the existence of a mind, is not that a gain? for there are many who are open to arguments of this class on whom speculative reasoning or a mere dictum falls without any weight.

Why should we cast aside the solid facts presented to us by material objects? In his communications throughout the universe with us, God ever materializes. He equally speaks to us through the thousands of graceful organic forms which are scattered in profusion over the surface of the earth, and through the motions and appearances presented by the celestial orbs. Our noblest and clearest conceptions of His attributes have been obtained from these material things. I am persuaded that the only possible route to truth in mental philosophy is through a study of the mind and matter.

The experience of 2,500 years, and the writings of the great metaphysical intellects, attest, with melancholy emphasis, the vanity of all other means.

Whatever may be said by speculative philosophers to the contrary, the advancement of metaphysics is through the study of the human brain. What sort of a science would optics have been among men who had purposely put out their own eyes? What would have been the progress of astronomy among those who disdained to look at the heavens? Yet, that is the preposterous course which has been followed by the so-called philosophers.

They have given us imposing doctrines of the nature and attributes of the mind in absolute ignorance of its material substratum. Of the great authors who have thus succeeded one another in ephemeral celebrity, how many made themselves acquainted with the structure of the human brain; doubtless some had been so unfortunate as never to see one. Yet that wonderful organ was the basis of all their speculations. In voluntarily isolating themselves from every solid fact which might serve to be a land-mark to them, they may be truly said to have sailed upon a shoreless sea, from which the fog never lifts.

The only fact which they teach us with certainty is that they knew nothing with certainty. It is the inherent difficulty of their method that it must lead to

unsubstantial results. What is not founded on a material substratum, is necessarily a castle in the air.

The world, with its various avocations, is governed by this materialistic substratum. Mind or matter. The architect lays his plans and specifications for the erection of a magnificent palace, the mind of man directing, the acts of man completing it.

The artist sees in his mind the beautiful landscape that his skill as an artist afterward portrays with all its splendor and beauty.

The mechanic sees his work as it is completed, even before it is begun.

The musician reads his music, at the same time executing it.

The sculptor cuts with chisel and mallet what his mind sees and dictates.

The human brain is the governor of mankind, as the governor is to the engine; even so is the mind of man, it molds his future, it regulates his habits, both moral and physical; it governs his actions both present and future. Then, if this mind has such a wide field to work in, exercising its influence in health and prosperity, why not have an influence over physical disease? Surely it has.

I am not quite willing, as a physician, still less as a man, in obedience to agnosticism, to give up the conception or hypothesis, if no stronger term can be presented, of a psyche, not a mere product of, but a primordial power over the organisms, something within these mortal bodies which loves and hopes, fears and wills, rejoices and mourns, weighs motives and renders moral decisions.

The influence of the mind over the body, in health and in disease, is at once one of the most interesting and important departments of medical study. From such study we may one day secure most valuable therapeutic means.

Illustrations of this influence are familiar to every practitioner. The poets knew something of this as well as the doctors. From Shakspeare we learn that a man can

"Creep into the jaundice  
By being peevish."

In a published sketch of Sainte-Beuve, I find it stated that certain sharp epigrams and severe criticisms of a volume of his poems caused him an attack of jaundice.

The average of American medical criticism could hardly be followed by so serious a result; it is too rich in honey and rosewater, and seems chiefly designed for the gratification of authors and publishers.

I believe the so-called longings sometimes observed in pregnant women are generally the result of a mental, rather than a physical, cause, for, having heard these longings occur in their condition, they forthwith invite them, create them from their imagination; these longings, at any rate, are oftener cured by mental than by physical means.

The influence of the mind in producing physical disorders is well illustrated in the familiar case recorded by Dr. Laycock: A female aged forty-eight who had not menstruated for eight years, while attending her daughter during a tedious labor, experienced uterine pains, a sanguineous discharge from the vagina, and on the third day the mammas swelled and became painful to the touch; a milky fluid then escaped from the nipples, and all the symptoms disappeared.

If bad news can stop digestion, sorrow blanch the hair in a single night, joy or fear kill suddenly as a thunderbolt, heroic will endure physical torture and moral agony without a sigh or groan, there is no difficulty in believing that the uterine functions of the puerperal woman may be seriously disturbed by emotional causes.

Dr. Barker, narrating a case where metrorrhagia twenty-four hours after labor

was caused by a husband's brutal and ill-timed remark, observes: "I have never seen a person recover from so fearful a hemorrhage." Duhamel gives a case where this hemorrhage took place on the tenth day. The patient had been getting along well and was just rising to have her bed made, when some acute mental influence brought on a most severe hemorrhage, the uterus filling up so as to reach the umbilicus. Cold ergot and astringents were vainly tried; but, finally, four or five hours' continuous compression of the aorta was successful.

I might from Gardien, Collins, Johnston and Sinclair, bring additional illustrations, but it is unnecessary.

Even where emotional disturbances are not the sole cause in the production of metrorrhagia, it is often an associated factor. Violent physical exertion, combined with the dread of the examination, is the source of hemorrhage in many cases.

As to how mental emotions produce these hemorrhages, the explanation probably is, increase in the heart's action in some cases, and in others a vaso-motor paralysis.

In studying the cases over which the mind exercises its influence, it will be found that in very many instances the special emotions called into exercise are fear, grief or anger.

Taking the brain as a base, diverging from it in every direction are the various nerves, distributed to every part and particle of the human economy, and so intimate is their connection that I am led to believe that there is not a disease, either local or constitutional, but what is influenced either directly or indirectly by the mind.

To establish entire confidence is one of the greatest works of the physician, and I find one of the greatest difficulties I meet in every-day practice is to establish this confidence. Give me the confidence of my patient and I will invariably cure him; without it I am a failure.

The mind exercising its influence, then, as it does, over physical diseases, may be properly classed as a disease in itself, of itself independent; and to treat such cases comes at once within the domain of the physician, and unless we do something in this direction soon, we will be classed as "Old-time fogies"—"Behind the times."

Now, gentlemen, in preparing this paper my object was not to meet your entire approval, but to stimulate you to a hearty discussion of this important subject. To me it is a new field, and I leave it with you who are older and better versed in metaphysical sciences. I, like the poet,

Gather posies from other men's bowers;  
Nothing but the thread that binds them is ours.

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## MORAL INSTRUCTION AND SCHOOLS FOR THE INSANE.

BY W. B. FLETCHER, M. D., SUPERINTENDENT HOSPITAL FOR INSANE.

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The matter of giving common school education to the insane, as well as instruction in manual labor, is a subject which is attracting the attention of alienists at this time as an aid in the cure of mental disease.

It is known as the moral treatment of insanity—education being the greatest aid. While this means was appreciated by Finel and Esquival, it was not sys-

tematically practiced until M. M. Ferrus, Falret and Leuret, about 1828, organized schools at the Bicetre and other hospitals in France, to teach habits of order and industry, and to instruct in reading, writing and gymnastic exercises.

In the United States, the hospital at Northampton, Mass., under Pliny Earle, and the Utica Hospital, at that time under Dr. Brigham, were the first to introduce systematic education of the insane. For some reason or other, the school in the latter institution has long since been discontinued, and at this time there are probably not more than four hospitals for insane in the United States that pay any attention to the systematic education.

In the Indiana Hospital the first school was opened two years ago in the Female Department; the attendance at school was not compulsory, and only about sixty-five women voluntarily accepted the advantages of instruction. These were organized into classes, which embraced from the simplest form of kindergarten teaching to the higher branches of mathematics, language, geography, etc. The several classes that attended, either morning or afternoon, devoted a portion of their time to needle-work, from the plainest sewing to the most delicate fancy work. The manufacture of artificial flowers has engaged the attention of many, and some have manifested a high degree of artistic merit.

In the Male Department the school has been organized about four months, is attended by from sixty to ninety patients daily, and better classification is maintained among the males than the females, and the number of branches taught is greater, but they lack the adjunct of mechanical employment. In both schools light gymnastics, dumb-bells and marching to music is carried out to the great enjoyment of the patients. Music, above all things, is highly interesting and beneficial to both classes, and the frequent intermissions between school exercises are devoted to learning music and singing. In the Male Department German is also taught to those who desire, and several Germans, who do not speak English, have been taught to read and write in that language.

Perhaps the most successful school in the world, and now so famous for its instruction of the insane, is carried out in the Richmond Asylum, Dublin, which was organized twenty-five years ago, and constantly carried on by that Nestor of alienists, Dr. Lalor.

It must be observed that a higher degree of education could be carried out in an asylum, where the majority of the patients are incurable, and are permanent residents of the institution, than in a hospital where curables alone are received. In hospitals the population is constantly moving; large numbers are being continually received and large numbers dismissed as rapidly as restored. From this fact alone no such results can be expected as if we were treating those who were permanent residents.

In an experience with several thousand patients, it is only an extremely rare case that I have met that would not be benefited by some kind of instruction or moral training, or can not be taught something, and I believe that superintendents of hospitals for the insane lose one of the very best means of curing by neglecting systematic instruction.

The benefits of teaching are more apparent upon those who have remained for a long time under treatment; their ward life is extremely wearisome and uneventful; the natural craving of the human mind for occupation is constantly held in abeyance by being compelled to sit idly on the chair or bench beside the dead walls, with nothing whatever to attract the mind from its morbid melancholy. Such cases, when brought into school at first, appear as dull and listless as upon the wards, but by the influence of music and gymnastics are soon aroused to a new

condition, and the body that was sluggish, and eye that was dull and aimless, begin to brighten with activity. Many instances could be given of persons who for years had evinced no interest in the world about them, whose daily life was but to eat and then sit idly upon the benches, who have been aroused to mental activity and become interested in other objects rather than their own melancholy meditations, if they even possess sufficient mind to meditate.

The first attempt at collecting pupils from the various wards of the Department for Men, and bringing them together in the school-room, to be placed under the instruction of two lady teachers, was quite amusing; some remaining stupid upon their chairs, others walking about the room, gesticulating; some swearing or using language not fitted for ears polite, others standing sullenly beside the wall and refusing to be seated. Several thought themselves teachers, and began giving instruction; others desired to preach, pray or give political harangues. The whole scene was a fair exposition of the old-fashioned bedlam, and was perfectly appalling and almost disheartening to the two ladies who had devoted themselves to this special calling. The first and most difficult object to be obtained was to reduce this heterogeneous material to order, and by combination of kindly persuasion, aided by music and marchings, it was but a few days until the various pupils took their seats at the same table, used their slates or copy-books, or went to the black board at command; and in a month's time no greater punishment could be inflicted upon one of them than to be sent back to the wards and not permitted to enter school until ordered by the teacher.

One of the greatest difficulties to be overcome in a school of this kind is to obtain regular attendance from the pupils, many of them being of the class who engage in ward work or in labor upon the farm or garden, being frequently detailed for that purpose, which greatly interrupts the systematic work in school that is intended for them. No school of this kind can be successful without not only the hearty cooperation of the Superintendent and teachers, but also of every subordinate officer and attendant.

In almost every hospital for the insane in America are a large number of epileptics, whose condition is probably the most unhappy of all God's creatures. As a rule, on account of their strange malady, their education has been totally neglected from infancy, and after adult life, becoming unmanageable at home, or even in the hands of the keepers of the poor, they are thrust into asylums, absolutely ignorant, ungovernable in temper, and most unhappy in disposition. Notwithstanding many of these persons may not be afflicted by their malady more than once a week or once a month, the interim during their whole life has been unoccupied either mentally or physically. To such a case, moral instruction and systematic education gives not only a relief from ennui of life, but absolutely modifies the character of their disease. The teaching of such persons self-control is more or less successful in all cases. Such persons may be taught to read and write, and in various ways to occupy their minds, which, without such instruction, are constantly undergoing a retrograde condition as their years increase.

We are undoubtedly on the beginning of a new system of treating the chronic insane. Ten years from now we predict that every hospital in America will have attached to it a good school for moral instruction and manual training; that the custom prevalent heretofore of receiving patients into the hospital solely under custodial treatment will be done away with. The recognized principle that when mind exists at all it can be cultivated and trained into useful channels will be generally appreciated, and patients will not be allowed to retrograde into idiocy from lack of culture.



Indiana to-day possesses the largest school for the training of the insane in America, the entire number under instruction being about one hundred and fifty. As its good effects become more generally recognized the field widens before us, and with our better facilities for instruction, doubtless another year will add two hundred more pupils to the various classes.

A special school-room should be arranged in the Institution for giving better facilities for instruction. Shops should be opened wherein many kinds of light manual labor could be taught to men as well as women. The manufacture of mats, brushes and brooms, and the mending and making of shoes are now taught in the Government Hospital, at Washington, and at Norri-town, Pennsylvania, and could be introduced here with benefit to the patients, although it probably will not be remunerative to the State; neither is it intended to be so, the point aimed at being the occupation of the mind and hands of the patient, which leads greatly to the cultivation of his perception, reducing his chaotic life to one of system and order.

With a liberal Board of Trustees and a generous public, we expect to be sustained in our efforts at this the most natural means of righting the wrecked human mind.

POOR ASYLUMS.

BY WM. LOMAX, M. D., MARION, IND.

Information obtained in response to circulars issued April 28, 1886, to the health officers of all the counties of the State, by our worthy Superintendent of the Hospital for the Insane, furnishes the facts given in the subjoined table :

INSANE IN POORHOUSES.	Males.	Females.	Idiota.	Males.	Females.	Insane Epileptic.	Males.	Females.	Requiring Restraint.	CONDITION OF POORHOUSES.
545	342	203	395	208	187	248	134	114	167	Good . . . . 68
72	Insane not in Poorhouse.									Not good . 17
395	Idiota as above.									Bad . . . . 5
1,012	Total of Insane and Idiots reported.									Not given . 3

A very cursory survey of the reports of these charitable and benevolent institutions will force upon the mind a conviction that their appointments and general workings are far below what they should be. Of the sixty-six houses reported in good condition, only seven of the reports are couched in unmistakably assuring terms. These are "first-class," "excellent," "very good," "very good, indeed." Others, nineteen "moderately good," "good as could be expected," "as

good as the old building will admit of," forty are simply written "good," seventeen "not good," and five "bad."

A report of the County Health officers to this Board, some two years ago, in response to circulars calling for a sanitary survey of the county asylums, gave a much more deplorable statement of their condition than might be charitably inferred from the accompanying table, and, as it was more full and minute in detail, was probably in greater harmony with the real facts involved.

The report of the insane, not in the poorhouse, is very unsatisfactory. Only twenty-seven counties reported any at all, and the entire footing of these amounts only to seventy-two cases.

Some of the reports give a larger number out of the house than in it. In one county three are reported in and six out. Another, three in and nine not in the house. Some answer "none in the county" known to the reporters, and a large number give no answer whatever to the question.

Of the total population of insane and idiots of the State, it is doubtful whether more than one-half are in the houses provided for paupers.

An aversion in the minds of people, from family respect and pride, to exposure of insane relatives to public recognition, and a fear that the care and treatment by strangers might not be as kind and humane as that of sympathizing friends, will always tend to give uncertainty to statistics of the insane in private families.

Improvement in the structure and adaptability of the public charities to the benevolent purposes designed, with judicious internal management of the inmates to be treated and cared for, would greatly mitigate the griefs and sorrows of these pitiable children of misfortune, and at the same time win the confidence and support of a liberal-minded people. A very gratifying indication of improved public feeling in regard to providing for the poor may be found in the laudable departure of Elkhart County from a prevailing and culpable indifference to the comfort and wants of this class of our fellow beings.

With a commendable liberality, their Commissioners have built an Asylum, in fine architectural style, on a plan the best adapted to subserve the wants of the helpless occupants that could be obtained. The building is of brick, 200 feet 8 inches long, and 105 feet 4 inches wide, two tall stories above the basement. The latter gives room for furnaces and storage of supplies of subsistence, fuel, etc., needed for the wants of the house. Its arrangements are admirably suited to accommodate every variety and degree of helpless dependence, as well as the convenience of those employed in the service of the Institution. The building is warmed by six hot-air furnaces and ventilated by Smead's system of hot air and dry closet arrangement.

The cost of the building, ready for occupancy, given by Mr. Smalley, the gentlemanly contractor, was \$28,000. We added \$2,000 to cover all probable contingencies to put the house in complete running order, which he thought a pretty large estimate, making the whole building and outfit \$30,000. The work of construction, when visited by me the past November, was far advanced toward completion, and it was to be ready for occupancy the first of January.

It is to be hoped that the praiseworthy example of Elkhart County in providing for her unfortunate poor may be imitated at an early day by the municipal authorities of her sister counties throughout the State.

To provide for and protect such as are unable to take care of themselves has come to be a universally acknowledged and indispensable obligation of all human governments. To assure competent protection with the smallest burden to the peo-

ple is a problem in political economy to be solved only by gradual approaches. An agency dispensing unrequited benefits, amenable to no tribunal save its own moral approbation and the verdict of a not entirely disinterested commonwealth, is liable to deal its charities in rather meager quantities and, possibly, of nominal values. It requires a nobleness of soul to recognize in these ghastly wrecks and caricatures of humanity a kinsman and a brother. Yet this is the standpoint from which a perspective view of this field of sickening wretchedness must be taken to coördinate suffering as an objective condition, and sympathy as a moving force, into methods suited to meet the demands of the case. Hence, the observation that the treatment given paupers by the ruling authorities is the best test of the civilization of the community, is not without foundation in truth.

A reference to the table will show that nearly one-half of the insane are epileptic. This very naturally suggests the idea that the two maladies might be closely allied in their etiology. And the readiness with which these affections glide into each other, or at least epilepsy into insanity, and both into idiocy, indicates a prolineal, if not a common cerebral localization of the various functions disturbed in the several affections, idiocy, in these cases, being a partial or complete paralysis of that portion of brain, or endowment of brain, upon which mental phenomena depend.

It has been my observation in cases where these several neuroses occur consecutively in the same subject, as parts or degrees of the resulting idiocy, epilepsy has been the primary affection. Cases do occur in which the first evidence of cerebral derangement noticeable is announced by a violent epileptic seizure. Conscious sensibility is instantly obliterated. The brain is highly excited under a strong blood pressure. Clonic spasms convulse the voluntary muscles, and the whole system is thrown into tumultuous agitation. After a short time these symptoms pass away, leaving the patient in, apparently, fair health. These paroxysms may recur periodically with shorter and shorter periods of immunity until the bewildered intellect is thrown into the trend of insanity, or gravitates into confirmed idiocy.

A large portion of those doomed to insanity and idiocy have reached the dreary destiny through a series of transitions similar to the foregoing history. These diseases are unquestionably hereditary in many instances. When interpolated in a constitution free from pathological tendencies in this direction the prospect of cure is much more promising. A wise control of the social relations from which hereditary imperfections are transmitted to children would be a means of greater promise of curtailing the increasing ratio of the victims of epilepsy, insanity and idiocy than is likely soon to be incorporated into an efficient mental and physical hygiene.

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## THE INFLUENCE OF MENTAL STATES ON PHYSICAL HEALTH.

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BY JAMES F. HIBBERD, M. D., LL. D., RICHMOND, IND.

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Human health is best and longest maintained when all the organs and tissues of the body severally perform exactly their normal functions, for in this state the organization as a whole can most surely resist the causes of avoidable diseases, and is in as good order as can be to escape the accidents of life and the irresistible causes of disease.

There are many agencies that tend to derange the complete and harmonious action of one or more of these organs and tissues, but in this little essay we will only consider a few of the disturbing influences that have their origin in the mind of the individual.

Mental states are far-reaching in their impressions on the corporeal organization. Indeed, whatever else may be done to establish and maintain a resistance to the causes of disease will, at best, be only partially successful unless aided and sustained by psychic equipoise.

No man is well who thinks himself ill, and as there is a certain amount of disturbed action that must occur in a man before he counts himself ill, the extent of this disturbance that a given individual must have before he counts himself ill will often depend on his own mental operations. Perhaps it is not far beyond the truth to say that it is not often that upon critical investigation of oneself some part of one's vital activity is found not so well performed as it might be or has been, and in such case, if one's disposition is to give undue significance to such minor failures of this kind, he is either at once ill or prepared to be ill on the slightest further provocation. This is an unfortunate state of the mental operations, and it is encouraged and sustained by the almost universal habit in social life of inquiring after each other's health when acquaintances meet and exchange the civilities of the moment, and even in the more formal intercourse in society much time is given to detailing and listening to each other's real or fancied departures from good health.

This is a bad habit and should be abandoned. The animus of the habit appears to be to enlist sympathy for one's suffering or to have suggestions of means of relief. Sympathy is truly a great solace sometimes, but when the effort to secure it is so apt to lead to exaggeration of the claim for it, as in such cases as here alluded to, the evil of the habit largely exceeds the benefit that can come of it. And if the inducement to dwell on one's distempers be to have means of relief suggested, it is more apt to lead to mischief than relief, unless the party appealed to be skilled in the nature of diseases and the power of remedies. This carries us to the conclusion that it would be better for us not to speak of our maladies in a public way, but only in a confidential way to one's consort, parent or physician.

Constantly dwelling on slight ailments makes them greater, may even magnify them into serious disorders, and, while it is true that neglect of a trifling departure from health in the beginning may also carry one to serious consequences that might have been averted by timely attention, this is in no wise mended by discussing the trifling departure with all persons one meets, but it simply implies the propriety of presenting the facts to some one whose knowledge enables him to measure the difficulty and state the means of relief.

Emotions exert an influence over the human system that sometimes lead to serious consequences. A tender and excitable mother may be affected even unto death by joy at the rescue of her child from impending peril, or by grief at its sudden accidental death. Disappointment may bring permanent ill-health to its victim, or even death in the guise of a broken heart. Fear sometimes undermines the stoutest constitutions, and the apprehension of alarming epidemic disease may bring about a fatal attack of the malady; persons have died of cholera through fear of cholera.

The irrationable fear of death in every day life is full of evil import. The person who passes through life in the constant fear that death is lurking in every dark corner, and approaching in every unknown form and force, is robbed of present enjoyment, and is reducing the resistance to disease to a minimum. A rational

fear of death is a wholesome moral tonic, a supporting restraint against temerity and recklessness, but one who sees a destroying tornado in every advancing storm; who feels the pangs of drowning in driving through every muddy stream; who anticipates the presence of a murderous burglar in the rattle of every shutter shaken by the midnight breeze; or who hears the voice of an avenging angel in the nocturnal howl of an unhappy dog, is wrecking all present hope of peace and preparing oneself for an easy prey to many forms of disease.

To fence up against the evil tendencies of these mental errors, it is indispensable that we cultivate a rational consideration of the real duties we owe to ourselves and others in these seasons of sorrow, and estimate at their proper value the signs of danger that constantly surround us. True, many people are so constituted as not to be able to divest themselves entirely of the apprehension of danger when no true cause of danger is within view, but this does not exonerate them from making a perpetual effort to teach themselves the unwisdom of allowing these phantom dangers to curtail their rational enjoyment and undermine their rights of health. And it is especially important that parents in the management and culture of their children should not exaggerate the dangers that surround them, nor invent stories of imaginary dangers and rehearse them as affairs of either entertainment or discipline. Much, perhaps most, of the irrational fear of death in adult life is due to, or at least had its foundation in, the erroneous teaching of children by parents who took no thought of the evil they were doing while cultivating the emotion of fear to meet an unimportant requirement of the moment in unruly or disobedient offspring.

It is an established fact that a habit of mind formed in early life, giving way to these mischievous mental apprehensions, makes its impress throughout all subsequent years, and much may be done by the mature man to undo what has been wrongly done in his early teaching, and for his own best welfare he is bound to maintain a constant effort to substitute a good habit that will insure him the highest sanitary condition for a bad habit that is continuously holding him liable to ill-health and premature death. And there is a necessity that should never be disregarded by parents or guardians of children, or those engaged in their instruction, to cultivate in them a rational view of the accidents of life and of the dangers of disease and death, so that they shall not suffer from the depressing influence of imaginary dangers added to the real and unavoidable conditions of life in our present surroundings.

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## BATHS AND BATHING.

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BY W. A. FRITSCH, M. D., EVANSVILLE, IND.

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The State of Indiana has an abundance of good water. Rivers flow in all parts of the State. The northern region is studded with beautiful lakes, and flowing wells flow constantly in some parts from subterranean reservoirs. This supply of water, so necessary to our farmers and industries, is likewise of the greatest importance for our health. It should be guarded against pollution, and made subservient to the well being of our people. The rivers, lakes and flowing wells give the people of Indiana, where they are settled in villages, towns and cities, good facilities

to establish public baths for the common welfare. In vain do we look after the signs of such public establishments to commend our respect. We are behind other nations in this branch of public improvements, and could learn a great deal from them. In Germany, public baths can be found in all the larger cities, and even with some schools are establishments for bathing connected. The English people have made great progress in the same direction, and the Turks, on whom many look down as if they were an inferior race, possess the most splendid baths since the days of the East Roman Empire, as an inheritance from the old Romans. They have themselves so identified with this custom that public benevolence in that country furnishes baths for those who have not the money to pay for them. Our wealthy people here have, in general, good bathing rooms, with water supplied by the common water works, but these works are now seldom of any benefit to the poorer classes. The laborer, who works week after week in the foundries or other factories, when he feels the need of a good wash, and has a good supply of water in his cistern, may accommodate himself in a wa-h-tub as good as he can.

Not infrequently physicians will hear of an adverse opinion about bathing. If such is scrutinized, it will only bring the object of good public baths more to the hearts of the people. The physician is called to the bedside of a boy, and the mother tells the doctor plaintively that the bad boy has gone much bathing of late, and has now the fever. If the doctor inquires now further where the boy has been bathing, he will find it was in a stagnant pond, or at the wharf in the river where the city empties its sewers with all its dirt and filth. Who ever traveled, on a nice summer evening, in a steamboat on the Ohio River, has certainly seen boys bathing in the river, not seldom just there where sewers of cities are emptying in the river. No wonder those boys get malaria and often have to go through a hard sickness. Besides this, there is another source of danger which brings, every year, much sorrow to many homes. This is that a certain percentage of boys is lost every year in our rivers by drowning. In the city of Evansville, last summer, six boys lost their lives while bathing in the river. All this should convince us of the necessity of good bathing places with supervision by the local boards of health.

A brief chapter on physiology will furnish us further arguments in this cause.

The skin, which covers the body of a good-sized man, is equal to a little more than  $1\frac{1}{2}$  square meters, or 19.68 square feet. The secretion eliminated by this great area of cutaneous surface is very great and the skin really one of the most important organs of excretion; its functionary activity is so necessary for health and life, that it is important for everybody to see to it, that this healthy action is not disturbed. The excretions from the skin are: 1. Of a gaseous nature, the most principal carbonic acid gas. 2. Of a fatty substance. 3. The sweat, which contains in one thousand parts, 995 $\frac{1}{2}$  parts of water, and dissolved in it different salts, alkalies, urea, etc. These excretions of men coming in contact with dust and coal vapors in factories or other fields of labor, give the skin, sometimes, an unhealthy covering, which may hinder further excretions and the respiratory action of the skin, through which we receive a part of the oxygen, which we need to keep our blood in healthy circulation. Animals, when painted over with varnish, and so made impervious, will soon die. Strong animals live longer than weak; if some part of the skin is kept unvarnished, the life is prolonged also, and the larger a place of the animal's skin is, which remained unvarnished, the longer it will live. Rabbits die when only one-eighth part of their skin is made impenetrable with varnish or oil.

It is astonishing to see so many of the fair sex use all kinds of powders, often very poisonous preparations, to color their faces. A little thought about this mat-

ter should convince them that such powders, even if not directly poisonous, act detrimental to their health, and make, if used for sometime, the skin rough and reddish looking. If an honest workman at his daily work in a foundry blackens his face, he will wash it as soon as he is done with his work in the evening. Perhaps when he comes home one of his fair daughters is dressing for the evening ball, and is using nice-scented powder for her face; even if not a lead preparation, let it be chalk or magnesia, it acts just like any other dirt or the soot on her father's face, detrimental to her health.

Different baths are used among the nations of the earth, and the best have been adopted by all civilized people. So are Turkish and Russian steam-baths now established all over the world. They are beneficial for some sufferers, not for all, and should at all times be used with caution and under the direction of a physician. Besides these, salt, sulphur and other medicated baths are used to heal and strengthen, but I leave them here out of consideration. My aim is to direct attention to the swimming bath as a preventative of disease, and to encourage the establishment of such in every city, either in the river, or by a reservoir made for this purpose and wherein a constant current is kept up by the flow from the common water works and the outflow into the sewers. With the usefulness of bathing we combine here another purpose, the act of swimming. To swim means to work, and this particular work develops in the young the muscles of the arms and legs; by holding the breath in the act of swimming, because we do not want to swallow water, we widen our breast and strengthen our lungs. Swimming forces us to take breathing exercises, and helps in every way to develop and strengthen the young growing boy or girl. And how useful the art of swimming may be to us, when a sinking ship, in river or sea, finds us on her deck, has too often been demonstrated. Swimming, therefore, should be learned by everybody. In our Eastern States, on the Atlantic seashore, swimming schools have been established many years ago. Professor Francis Lieber, one of the brightest minds which Germany has sent to our shores, came, in 1827, to America, and began life in Boston as teacher in a swimming school. Lord Byron gives us the example that a boy with a weak leg even may become an adroit and enduring swimmer. Byron was no friend of the aristocratic bathing-room, so popular among his peers; when a boy he loved to roam on his native shores of Aberdeenshire, and in later years the poet sings in *Childe Harold's Pilgrimage*:

"And I have loved thee, ocean! and my joy  
Of youthful sports was on thy breast to be  
Borne, like thy bubbles, onward; from a boy  
I wanton'd with thy breakers—they to me  
Were a delight—and if the freshening sea  
Made them a terror, 'twas a pleasing fear,  
For I was, as it were, a child of thee,  
And trusted to thy billows, far and near,  
And laid my hand upon thy mane—as I do here."

He became, in spite of the lameness of his right foot, such a strong swimmer that he (May 3, 1810) crossed the broad Hellespont by swimming. In a letter to a friend he gives us the following account of this masterpiece: "This morning I swam from Sesos to Abydos. The immediate distance is not above a mile, but the current renders it hazardous—so much so that I doubt whether Leander's conjugal

affection must not have been a little chilled in his passage to Paradise. I attempted it a week ago and failed—owing to the north wind and the wonderful rapidity of the tide—though I have been from my childhood a strong swimmer. But this morning being calmer, I succeeded and crossed the broad Hellespont in an hour and ten minutes.”

And, to come home to our own State again, I cite, among others, Maurice Thompson, our State Geologist. In a well-written book, “Byways and Bird Notes,” he has proved himself a friend of nature and outdoor life. He, too, likes to roam in his native forests, and to plunge in its rivers. With enthusiasm he encourages his readers: “Leap up, and shout and sing. Take off your hat and toss your hair in the breeze. Plunge into the river and dive and swim. Go, sleep in a hammock in the Palace of Reeds.”

No doubt many would like to follow his advice, and seek the pleasures he so well describes, but duty binds them to a place and it becomes, therefore, our duty to provide for them as well as we can. Let us now see how and where the public bath should be established. In the first place, very close attention should be paid in selecting a bathing place. A place in the river above the city would be most desirable, when all the surroundings are in conformity with the pure water to be expected there. Bathing within the city, where many sewers empty the dirt and filth in the river, should be prohibited. City councils should pass an ordinance forbidding bathing at the wharf, and such a law should be strictly enforced; but, at the same time, it is their duty to make provisions for a good, safe bathing place. Cities with water works can, without a great outlay, establish in the middle of the city a reservoir, erect a building over it, and use the constantly in and out-flowing water also to wash out the principal sewers. Has a place been selected in the river, the next step would be to surround it with a barrier, by driving pillars in the river and connecting them with iron chains, to designate the danger line, if the river is large and deep. The part of the river so inclosed, on one side by land and on the other sides by the pillars connected with iron ropes or chains, should be perfectly safe for boys to bathe in. Of course it should be cleared of all snags and rocks and be smooth to the bare feet. Such a bathing place would be the most simple, and could be established without much cost by all towns and cities. To the private enterprise we must leave it to establish more commodious and elegant baths. On the river it might be done by joining four large flat-boats together in a square, leaving inside room enough for swimming, and on these boats buildings could be erected to give privacy to the bath and furnish rooms for dressing. In large cities with water works, a hall might be erected with a re-ervoir inside, private rooms, bath-rooms for medicated baths, etc. Such a swimming bath, either on the river or in a city hall, would be a very creditable undertaking and an ornament to every city. We hope the time will soon come when good public baths for the people will be established in all towns and cities over the State, and we are confident that the people, true to their sound instincts and informed of the healthy effect of bathing and swimming, will patronize them.



## WATER.

BY A. G. PORTER, M. D.

[An address delivered before a sanitary convention held at Lebanon, Indiana, May 4, 1886.]

*Mr. President:*

Through the kindness of Dr. Heady, health officer for this county, I was invited to furnish a paper for this occasion. This being the first meeting of the kind ever held in this county, it marks an era in our sanitary history, and hence becomes a matter of no little importance. And my only regrets are to be found in the fact that I have not had at my disposal sufficient time to enable me to do justice to either the subject or to myself; hence my remarks must be a little rambling. A scientific advance in sanitation was little thought of prior to the beginning of the sixteenth century. In fact, I do not call to memory the page in history that records the instance of a ditch or dyke having been constructed for sanitary purposes. It is true that they were builded outside the city walls for protection against invasion from hostile enemies, and these ditches were frequently filled with stagnant water half the year. No sewers were walled deep under ground as a health measure. Our forefathers erected their cabins in the midst of the dense wilderness, beside the mountain, on the banks of the river, upon the margin of the lake, close to the muddy lagoon, or hard by the swamp, with impunity. It was not until the dark ages had passed and superstition and barbarism, with their concomitants, had in some degree faded away before the advancing sciences that the chaotic mass of ignorance and bigotry began to yield to the forces of intelligence and culture.

Tribes and peoples no longer sought the blood of neighboring tribes for mere trivial or imaginary causes. In fact, the whole sanitary system is the result of intelligence, taste and culture, and has grown to its present proportions within the last two hundred years. It has been literally evolved out of the elements and the fragments that lay drifted along the pathway of human progress in greater or less profusion.

It has come up out of a state of things and grown with a rapidity that is literally bewildering. Think of the change. Nothing was thought of systemized sanitation two thousand years ago, when your fathers were wandering tribes—nomadic hordes of barbarians around the base of the mountains, or along the shores of the Caspian or Euxine seas, either in pursuit of their retreating enemies or flying before victorious foes, and drinking beer from the skulls of the slain. Sanitary reforms were not thought of until long after Greece had ceased to rear and to educate her hardy sons for the arena and the field only. Not until centuries after Roman chivalry and the Roman soldier had become matter of history that it began to take form and to attract the attention of great minds in all civilized and cultured nations; and through their efforts and by their constant care it has grown to its present significance. These laudable efforts, fostered and encouraged by the medical profession, have been rewarded in the past two centuries by an additional average duration of human life of about seven years, and over two years and a-half of that has been added within the past fifty years. These are matters of no little pride, as well as consolation, to the medical profession, as they are properly regarded the conservators of the people's health.

In fact it now seems that we are beginning to reap the rich fruition of the labor of those who have preceded us. Then the question naturally arises, How have these great results been accomplished? And the answer in part is found in the fact that the people are better fed, better clothed, better housed, better kept generally, as well as more cleanly, than in former ages. Chemistry, too, has graciously come to our relief, and has added wonderfully to the health and comfort of the people. It may be traced from the kitchen to the nursery, and on through all the different phases of human life. But, Mr. President, I desired to say a few words about simple, plain water. I know that it is frequently regarded as not only cool, but remarkably *thin* for this age; yet it has been said (by one who was supposed to know) that cleanliness is next to godliness. We no longer hear it said that the dirtier children are raised the more healthy they are. Such an argument to-day would not apply to your horse, or even to your pigs. Hence it is unnecessary to urge the matter of cleanliness, in which water plays an essential part. But when we come to reflect, we see that about seven-tenths of the human body is composed of water, and that water is the great solvent prepared by nature, the pertinent question at once arises as to the quality of water we should use. It is water that gives mobility to the fluids; it dissolves and carries in solution the various substances intended for nutrition and destined for excretion. And now that every healthy adult person excretes about *ninety ounces* of water every twenty-four hours, which certainly signifies to us that this natural waste must be supplied in order that the vital processes may at least remain in a normal condition. And the substitution of anything in the way of a stimulant would certainly be regarded as hazardous. Who that has witnessed the sufferer from great and exhausting hemorrhage, when the system is being robbed of its blood, that has not witnessed the urgent demand for fluids as the patient begs piteously for water?

Then the question is at once solved as to the quality of the water we should use. Pure water is colorless, tasteless and odorless, and is composed of one equivalent of oxygen and two of hydrogen. We seldom see water that is absolutely pure, unless it be rendered so by artificial means. But when tested it is nearly always found to be impregnated with, or at least to give off, traces of sulphureted hydrogen, carbonic acid gas, nitrous oxide, olefiant gas, iron, aluminum, potassium, lime, or some other of the different salts or minerals. And now, while these are present in their usual quantity, they are probably not deleterious to health; and while it is true that pure water may not absorb some of these elements, it is equally true that from a law of affinity they form combinations with each other, and that result may be absorbed and held in solution, or at least in suspension. Nor is this all—the water may be loaded with organic matter or with vegetable fungi.

Now, when we remember that the upper strata of the earth is rich in *detritis*, as well as vegetable decay and animal decomposition, a grand secret is at once disclosed. It has been estimated that nearly a quarter of a ton of worms, bugs, reptiles, insects, and small animals, die and decompose annually on every acre of our low, damp ground. Add to this the large amount of domestic animals that die and fester upon or near the surface, with the illy located cemeteries and burying grounds. Then when you have scrutinized this fermenting, rotten mass of festering decomposition to your entire satisfaction, take for example a town or little city like our own, with 4,500 inhabitants, with 900 houses and as many privies set over shallow vaults dug in the ground, provided with loose wooden boxes as the receptacle of the most foul excreta; to this add 100 stables in which horses and cattle are kept, with their filth and drainage, and with comparatively no sewerage, and then remember that your water supply is from shallow wells ranging from twelve feet

to twenty-five feet deep; then think of your drinking water as it leaches through this seething mass of putrefaction and tell me what you have in the way of a health beverage. Nature's great solvent filtered through this hideous mass. Do you wonder that the people are sick when they draw their daily supplies from this reeking nursery of disease germs? The water itself, when left in a vessel for a few hours, not only becomes stale, but literally decomposes and stinks from its impurities.

Mr. President, this is no fancy sketch drawn for the occasion, when you reflect upon the fact that the upper strata of the earth is literally scarred with abrasions and fissures furnishing easy and ample drainage from stables, privies and cesspools directly into your wells, many of which are not twenty feet and scarcely any of them ninety feet distant. And here I make the assertion, sweeping as it may seem, that there are not a dozen of the eight or nine hundred wells in this city that are not contaminated from these causes.

In the country it is not so universal.

No intelligent medical man, who resided and practiced here in the years gone by, who is not surely cognizant of the wonderful effects, the mighty change for good in the general health of the people, following our system of ditching and drainage. Forty years ago there was not an artificial ditch in the county. At least one-fourth of the area was covered with water the year round, while another fourth was subject to overflow whenever it rained, so that largely over half the county was so saturated with water that cultivation was utterly out of the question. That medical man will remember, too, with equal vividness, that in those years we expected and prepared for our autumnal sickness with the same certainty that we expected to reap our harvest, and were less frequently disappointed in the first than the latter. Malarial troubles were then common. Intermittents and remittents were of ordinary occurrence. Enteric fevers and pneumonia were extremely fatal. But within the past twenty or twenty-five years the farmers, as well as the towns and villages, perhaps actuated more from a pecuniary standpoint than one of sanitary value, have become largely interested in ditching and drainage. The result is that malarial fevers have become scarce, and we have had no epidemic of typhoid (or enteric) fever for many years, while the few isolated cases that have occurred could be traced nine times out of ten to the water supply. The face of the county has undergone a revolution, has been changed from a howling wilderness, a huge marsh, a malaria-breeding swamp, to a healthful, prosperous and happy country and the good work is just begun. Do not tell me in this day and age—in these years of scientific, common-sense investigation—that cleanliness, pure air, clean water, proper nourishment, clothing and shelter, are not conducive to physical health and growth, with intellectual strength.

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## IS MAMMON GREATER THAN HYGEIA?

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BY DR. J. S. ARWINE.

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History informs us that during the medieval ages the great mass of mankind were governed and controlled by superstitious ideas, and in their crude, ignorant and uneducated condition they prefigured gods and goddesses like unto themselves, whom they believed to possess, in the highest degree, all the passions that

ranked in their own breasts, and that these gods and goddesses conferred upon men riches and worldly grandeur, or the most abject poverty and physical calamities, according to the caprice of their own wills. The Syrians claimed and worshipped a god whom they recognized as Mammon, and they believed him to preside over and control the riches of the world. To prove this proposition we have only to consult the teachings of Christ, where He mentions Mammon as a personification of worldliness; and, if it is proper for us to form our conclusions from the actions of men, we are forced to believe that the Syrian god still lives in the memory and affections of men, and that the hosts who sacrifice at his altar or bow at his shrine are much more numerous than those who worship Hygeia, whom the Greeks worshipped as the goddess of health. They believed her to be the daughter of Esculapius, their god of medicine, and that he had given her special control of the health of the inhabitants of this world, and that if they would enjoy health they must avoid offense to this goddess, Hygeia. Naturally, we would suppose that our word hygiene was a derivation from Hygeia, but our lexicons tell us that it was adopted from the French. Hygiene means good health, or the science of health. Consequently, every man, woman and child is deeply interested in the thorough understanding of the laws of hygiene, as upon their obedience to these laws depends their success in life, for without good health life yields no enjoyment, and the practical operations of hygiene are thought to be the art of preserving health. Then the special objects with which hygiene proposes to deal are the surroundings of man, such as the climate, the air he breathes, his dwelling places and the arrangements for keeping them pure; the care of his person, his food, water and other beverages; his exercise, work, clothing, cleanliness, and his habits in the use of tobacco and other narcotics; the controlling of his appetites and passions, together with the prevention of diseases, and the care of the sick and sick-room. Consequently, hygiene, in its highest and broadest sense, must include an examination of all the conditions that may or do affect the generations of mankind in their development, in their growth, and in the decay of individuals, of nations and of races. Scientifically speaking, hygiene is almost, if not quite, co-extensive with biology, and it may, perhaps, be said with propriety to include sociology rather than physiology, for this reason: It is calculated to remove everything that can cause or help to produce pain, suffering, crime, vice, sickness and premature death, by the use of whatever can in any way turn aside, destroy or prevent such causes from operating upon man. These are the objects that sanitarians are investigating. They are endeavoring to make plain the practical application of the principles of the science of hygiene. They are not only using this science, but are calling to their aid all the discoveries that scientists have made, together with all the power that art can lend, hoping that they may be enabled to fully expose the various causes that affect man and produce his discomfort. This done and the battle is half won. Such causes being fully understood, they can be avoided, prevented or turned aside before they become effective, and man's health can be preserved, his vigor increased, and the number of his years greatly multiplied. But as yet many of the causes that produce disease are only suspected, and unreliable as this may be, it should be hailed with joy, as it illustrates the fact that the old superstitious ideas that hung like a pall of cimmerian darkness over the minds of the great mass of the human family, a few centuries since, are passing away, and as they are receding the idea that diseases are dispensations sent by some god or goddess, as a manifestation of their displeasure, are passing with them. Yet, careful observations will enable us to discover vestiges of these old ideas among the people. They most frequently bub-

ble up in cases of bedridden patients and epidemics of diseases. In such cases many advocate the turning them aside by appeasing the wrath of offended Deity by fasting and prayer.

Be this as it may, the intelligent, close, observing student of natural laws finds that the causes which produce diseases are the results of conditions brought about by man's willful or ignorant violations of natural laws, and that nature is inexorable, and her penalties must be borne by those who violate her laws, or their progeny. Therefore, the students of nature are forced to the conclusion that sin and disease are twin sisters, and in them we may behold the reciprocal influence in dragging down the human race to the lowest depths of physical, mental and moral depravity. Some able divines have advocated the opinion that sin and disease were one and the same. Notable among these was one Edward Irving, a most popular and eloquent minister of London, England—a man of strong will and powerful intellect. In 1832, when cholera was depopulating the city, he arose on a Sunday morning in his usual health, but by breakfast-time he was suffering great agony. His physician found him with sunken eye and hollow cheek, evidently a prey to that fatal malady, cholera. Irving believed that disease was sin, and that it could be overcome by faith; but as cholera was about to overcome him he thought he had lost faith, and he determined to engage in a moral struggle. He arose and tottered to his church with dimmed eyes and swimming head. With labored breathing he reached the pulpit, grasped its sides for support, and then looked wistfully around, pitting his will power against a collapsed and apparently dying body. His native energies responded, the crisis came, and a cold sweat broke out all over his body, great drops standing on his hands and forehead. For more than one hour he preached with a fervor unknown to himself, though he was the most fervid of pulpit orators, and that evening he preached to a crowded house, exhibiting a most striking illustration of the ability of will power to overcome disease, when buoyed up by a firm faith in the efficacy of the blood of Christ. But to what extent the improvement in man's physical, mental and moral condition would be carried by the correction of vice and prevention of disease, is left to conjecture, for, as society is constituted, it appears almost impossible to obtain perfect personal, let alone public health. This being true, no one will assert that the average duration of man's life may not be very much increased, and his physical, mental and moral conditions greatly improved. Everyone that has given the subject any thought will say that there are thousands of lives destroyed annually in the United States that could have been saved and become a pleasure to their relatives, and a source of revenue to the commonwealth, had our government enacted such laws as would have caused the people to adopt, and practice, good hygienic rules. There is no doubt but what laws, enforcing the practical operations of hygiene, would prevent annually tens of thousands of cases of sickness, and the suffering of an almost unlimited number of citizens, such as are found everywhere throughout the country, laboring under physical debility and impaired health, though not confined to rooms and beds of sickness, but are eeking out most miserable existences, all of which has resulted from causes that were preventable, evils that might and should have been removed, had our Government exercised proper hygienic oversight. This class of cases causes quite a loss to our country, as they require the expenditure of quite a large amount of money by the sufferers and their friends yearly, as every effort is made to restore them to health. All this monetary loss must be borne by the public, on account of negligence on the part of our Government in adopting a thorough system of hygiene; as the means that would prevent such losses, and remove such evils from among the human family, are

within their own reach, and it certainly is the duty of governments to enforce the use of these means by wise legislation, for if they were used as they should be their efficacy would be found much more satisfactory and efficient in preventing diseases than any or all remedies for the cure of diseases are. In the days of old Job the declaration was made by an old, shrewd and close student of human nature, that all that a man hath will be given for his life, and if we are allowed to judge men by their actions, we must conclude that the adage is literally true of men in our day, as hundreds and thousands are hurrying and pushing, up and down, over land and seas, in search of climate, of water, and of doctor to restore them to health, illustrating to us the old fallacious idea of Ponce de Leon, who traveled in search of the waters of life, proving beyond doubt that many people are controlled largely by these old, superstitious notions. All such fallacies must, of necessity, engage the attention of sanitarians, for they know that by careful investigation they can possibly meet human wants and needs. They are confident that this work is a duty, inseparably connected with true service of God and man. They recognize the fact that we are all of one family, and they love humanity for the divinity that is in it; they have an innate consciousness that if they are good to themselves they must be good to human kind; they believe that this course of conduct will enable them to find and enjoy the true relations of life together with the largest amount of happiness that can be obtained by mortal man. They feel confident that a narrow, selfish life must always be small in results, and when its decline comes it will have nothing to comfort it—no joy to illuminate the approaching dark night of death. This is the reason why those who have been, and are, energetic and persistent in the study of nature and her secrets are always ardent advocates of sanitary science; and as progress is apparent everywhere in the arts and sciences, and in the industries, may we not regard this as an inherent tendency in the human family to return to the physical, moral and intellectual perfection of original man? Does not the nineteenth century, especially the latter part of it, seem to place men upon a higher plane, to bring them face to face with a new era in human affairs? Everything appears to be pressed forward by a swelling tide of progress; men and governments are making efforts to advance the interests of humanity; but all these advances are only bringing to our vision the first faint rays that dart past the slowly but surely receding dark clouds of ignorance, and which so nearly overshadowed the world during the middle ages—that time when might made right—a time when the poisonous breath of fanaticism was sufficient to, and did often, blight life's fair-prospects. But as we are leaving this chaotic condition of society, it seems that we ought to inquire the duty of organized governments, in regard to the protection of the health and lives of their inhabitants; it does seem that an American citizen could make no more appropriate inquiry, as each inhabitant has an equal interest in our own native land, which we believe to be the fairest and most free of all lands. In this land of ours we believe hope takes the deepest root, and throws up the most luxuriant growth that the sun of heaven has ever shone upon. In this great and goodly land of ours there are a diversity of interests that need to be looked after, that demand the most vigilant and watchful care of our Congressmen. Indeed, we may say from the members of each co-ordinate branch of our government, whether National, State or municipal, their first and most important duty is the protection of the health and lives of their constituents. But the scramble for place and power, for official preferment, has become so desirable, and the discussion of various topics so sharp and so animated that the contestants for political preferment pass by the matters that the public are most interested in, but have much to say in regard to vested rights,

when the mass of citizens have no such rights as they refer to. Then what are those vested rights that our politicians give so much attention, that they grow so eloquent about? They are nothing more or less than the investment made by capitalists in the machinery and paraphernalia for the manufacture and sale of intoxicants, of poisons that destroy the health, happiness and longevity of our race; that fills our land with widows and orphans, our alms houses with the helpless and impoverished; our asylums with demented human beings, our reformatories, jails and penitentiaries with criminals and foot-pads; but those who are interested in these vested rights are entrenched behind millions of dollars, and they have a common fund always ready to meet any emergency that may arise, and in this way their stronghold is kept almost, if not quite, impregnable, as money and power are the strongest temptations that can be presented to mortal man, and by these levers. Those who are interested in the manufacture and sale of intoxicants, directly or indirectly, secure the nomination and election of a majority of all the officeholders in our country; and when they commence their canvass they become great sticklers for the Constitution, virtually declaring, as they did a few years since in Indiana, that the people did not have the right to change the Constitution of the State. Being officeholders the public generally respects their opinions, and in this way their advocacy of vested rights was tacitly acquiesced in by the people, and any bill that may be brought before a Legislature that could, or would if it become a law, restrict, or in any way interrupt the sale of intoxicants, is an alarm sufficient to raise the cry "unconstitutional," and a monstrous measure, one that is calculated to unsettle the values of property, and if adopted, will bring wreck and ruin upon the country, as it proposes to curb vested rights. To prevent a minority from officering the country, and filling it with squalor, suffering, poverty, and destitute women and children, who have been abandoned by their natural protectors, their husbands and fathers, who have been turned into fiends by strong drink. In this way pain, misery and suffering are entailed upon the human race. Diseases are propagated and life shortened, and still politicians will do everything in their power to divert attention from the true cause. They will declare by all that is sacred, that we must not trample on vested rights; that we have permitted them to spring up among us, and now we must not attempt their removal; that we dare not correct these evils by laws, as such laws would restrict the manufacture and sale of intoxicants; that they would disturb vested rights. What! Must the people be compelled to bear greater burdens of temptation? Must the laborer work late and early, and live on the most frugal diet, in order that he may meet the demands of the tax-gatherer? The charitable institutions of the country must be supported, and the taxes must be paid, and they must be increased, as our charitable institutions must be enlarged to accommodate the constantly increasing number of public wards. This is a necessity that grows out of the privileges our government extends to those interested in vested rights, favors granted to the men who are engaged in the manufacture and sale of intoxicants, and for these favors these men willingly officer and control the policy of the country, and this gives them a guarantee of the full enjoyment of their vested rights. However, we are of the opinion that the agricultural, manufacturing, and mercantile interests of the country ought to engage the careful attention of both National and State legislative assemblies, as the whole population have a direct and general interest in all these pursuits, which we think makes it doubly the duty of both National and State governments to encourage their population by enacting laws that will enable them to carry on the pursuits upon principles of equal and exact justice, that all may prosper. But what interest is there, or that

any one can have, in this broad land of ours, that is comparable to the interest that each and every one has in the protection of their healths and lives. It matters not what their calling may be, whether their work is manual or intellectual, or whether they are enabled to gather up and store the riches of this world, or whether they are only able by constant toil along the rugged pathway of life to gather the means of the most frugal and self-denying subsistence, all must be, and is, subordinate to the possession of health. This is a truth that ought to impress the minds of those whom we have chosen to represent us in our law making assemblies—that the first and most important subject for their consideration is, how can the public health be best preserved? or, what laws are necessary and best calculated to protect the health and lives of our constituents? But it is unfortunate for the public that the great majority of our politicians have but little knowledge of sanitary science and their egotism forbids them calling to their aid the knowledge that sanitarians have obtained by self-sacrificing devotion to the interests of their fellow men. Every proposition that can, or may in any way, relate directly or remotely to the bettering of man's condition, or the health of the public, is a subject worthy of the most careful consideration of the wisest statesmen, and the earnest and most energetic support of all citizens. All should unite with sanitarians to better the condition of human society everywhere, and in every possible way, as hygiene may find human wants and needs all along the pathway of life, and be ever ready to succor the needy, according to the emergencies of the case. As common observation must convince every one that the average duration of life falls far short of its allotted three score and ten years, which should prompt us to seek the blessings of Hygeia, that we as individuals, as communities and States, may acquire knowledge and power, that we may be able to remove the causes that bring pain, suffering, sickness and untimely death, that this may be accomplished. We have good grounds of hope, as statistics clearly show, that a slow but progressive increase in the duration of human life has been attained during the last three or four decades, under the very imperfectly organized working of sanitary science. It is only of recent years that our law making powers have been induced to give the science of hygiene any encouragement whatever, and yet the laws relating to hygiene are quite imperfect, and sanitarians are generally of the opinion that it is a mistake on the part of the general government, and very unfortunate for the inhabitants of the United States, that their Congress offers them no protection from preventable diseases, and especially from those that are indigenous, while thousands of their constituents are annually dragged down to untimely deaths by diseases that might have been prevented had our Congress enacted good laws relating to hygiene. But the negligence in this matter does not only cost the country the lives of her citizens, but in addition thereto, millions of dollars each and every year, if we admit the value to be correct that statisticians have placed upon the life of each able bodied and industrious man, which is sixteen hundred dollars. This gives us a data from which we can estimate the value of a human life, and the annual loss to the country in productive labor, as the result of preventable diseases. Our Congress has established an agricultural bureau, with a fund at its disposal of perhaps a hundred thousand dollars. that they may be enabled to investigate any outbreak of disease that happen among horses, horned cattle, sheep, hogs, or poultry, and as I understand from the public press, this fund has been exhausted during this year, 1886, in the investigation of pleuro-pneumonia among the cattle, mostly in Illinois. The propriety of this we are not prepared to dispute, but we must ask where is the fund for the investigation of diseases that are ever present among the people. Are the health and lives of domestic animals of more importance than the



health and lives of men, women and children. If we form our judgments by the acts of Congress it would, indeed, seem so. As Congress has provided agents for the protection of fish and fish hatcheries, and for the young seals of Alaska, our congressmen are full of sympathy, which prompts them to protect everything but your children and mine, those dear ones of ours that must in a few decades become the rulers of this great country of ours, and still preventable diseases drag them down to untimely graves, by hundreds and thousands, and this will elicit no care from those who, by our suffrage we have given place and power; and should we approach them, and ask protection with tears of grief streaming from our eyes, they turn a deaf ear to our appeal, and tell us it is human to die, and try to console us by saying the Lord gave, and the Lord hath taken away, an effort to impress upon us the conviction that the Creator is responsible for our bereavement. We know that the journey of life, from birth to manhood, is beset with many more dangers than ships have to encounter in entering any of our coast harbors, and still our Congress does not appropriate a dollar for the protection of the innocent and helpless children of the country, and yet there is annually appropriated by our Congress millions of dollars for the improvement of our coast harbors, and the maintenance of light-houses and fog signals. But we must bear in mind that ships and their cargoes belong to capitalists and they must be protected, and that every precaution may be had, our Congress annually appropriates thousands of dollars to sustain the signal service, that capital may be fully protected. Then each and every session our Congress appropriates thousands of dollars for the improvement of our rivers, that the produce of the country may readily be placed upon the market, that the monetary interest in this great country may be better served. Every monetary interest in this great country of ours engages the attention of our politicians, and our Congressmen can always be found in their places when a moneyed corporation is to be served. They have given millions of acres of the public lands as subsidy to railroad corporations, but never a dollar to help ward off diseases that are ever present, menacing the health and lives of the people, but they excuse themselves by saying that the prevention of ordinary diseases belongs to the State and municipal governments, and there can be no doubt but what the public health ought to engage the most profound attention of the members of each and every law making power in our system of government. It is true that our Congress at its last session (1885-6) appropriated forty thousand dollars to defray the expense of a commission to be sent out to discover the cause of yellow fever, and the means of its prevention if possible; but this sum is quite insignificant if we compare it with the millions that are appropriated each and every year for purposes that can in no way be compared with the importance of public health. After all this, is it not reasonable that we should look to, and expect some protection from our general government, which would encourage our State and municipal governments to strive, in every conceivable way, to obtain the best and most approved modes of preserving the public health, as common diseases are to be found among the people at all times; but the liberality of our Congress has not been referred to for the special purpose of fault-finding, but to call attention to the fact that Mammon is much more revered than Hygeia, and to call attention to the very low estimate placed upon human life by politicians, which almost forces us to the conclusion that they absolutely care nothing for the dear people, only on the eve of an election, when they use all the arts of which they are masters, with the most extravagant promises of reform that the burdens of taxation may be lifted off the shoulders of the people, and of furthering the monetary interests of the voters in

divers ways, hoping by chicanery to bribe the masses to cast their votes for them. But the mass of our politicians do not seem to understand what makes a country great; they fail to understand that England owes her prowess to the dictation of her great philosopher, David Hume, who taught the doctrine, in his essay on political economy, that men and commodities were the real strength of a country and of cities; that in the national stock of labor was to be found all real strength, power and riches of a country or city, and that money is the oil that lubricates the machinery of commerce, and makes it run smooth. Then, for this reason, all branches of governments, national, State and municipal, ought to exercise the utmost care in protection of the health and lives of their inhabitants. They ought, by wise legislation, to cause, as far as possible, the removal of every disease-producing cause. This done, and the agricultural, manufacturing, commercial and monetary interest of our country may safely be trusted to the course of human events. Jarvis, on political economy, says that every dollar earned, and every increase of individual estate or new value created is so much addition to the common wealth and every detraction from individual estate, and every dollar expended without adequate return, or every impairment of values, is so much taken from the public capital. This establishes the proposition that if an individual earns more than the cost of his living he is adding to the public wealth; and, on the other hand, if his living costs more than he earns, he becomes a burthen on the public, and demonstrates the fact that it is the excess of production over consumption that constitutes the wealth of a country, and gives us an illustration of the fact that the wealth of country, town or city depends upon the productive capacity of their inhabitants, and as the productive capacity of every people depends upon their enjoyment of good health, this establishes the fact that it is the duty of every department in our government to use every effort in their power to protect the health and lives of the people from the ravages of diseases and premature deaths. The neglect of such precaution may be compared to the loss on crops for want of proper cultivation, or their destruction by stock on account of bad fencing. These causes of loss and ruin are under the control of the husbandman, and may be prevented by proper care on their part, and so may diseases and untimely death by proper efforts on the part of our law making power. Such care would save the country from much loss. Mr. Farr, the Register General of England, has given the best and most elaborate calculations on the monetary value of human life, and he makes men, women and children in the United Kingdom worth £150. This, he claims, is their inherent value as a money-earning people, but in America, where the wage and interest rate are much higher, it would be more nearly correct to place the value at one thousand dollars on each life. The foregoing are the calculations made by the most able and painstaking students of natural laws and their application to human life, and they are generally thought to be correct, and life insurance companies have adopted them as a basis for their work, and sanitarians use them in making estimates of the good they can do. Provided they only reduce the death rate three per thousand, think what a vast saving this would be to the country; an annual saving of over fifty thousand lives—according to the estimated value in productive labor, about one million five hundred thousand dollars. If every taxpayer was compelled to pay a tax of five or ten dollars for good sanitary improvements throughout the country, the gain to the public would be much greater than it would be from any other investment that could possibly be made by the public with an equal amount of money, and the cost of good sanitary improvement would not be nearly so great, nor would the gain be limited, as the statistics of England show that the death rate has been more than doubly decreased with a much less

expenditure of money than five or ten dollars' tax would yield us, and their statistics show that the duration of life has been so much increased that it has given them thousands of years in productive labor. In London, England, the death rate has been reduced from fifty to the thousand to twenty-three, which gives that city the advantage of a hundred thousand lives in productive labor. But as yet our American statistics are so imperfect that it is impossible to make a reliable calculation from them, and the laws regulating the reporting of births and deaths are so imperfect that absolutely correct statistical data can not be had, nor will not until the people at large are made to realize the important bearing of correct vital statistics upon their future welfare, and then they will demand more perfect laws and a more faithful and implicit obedience of such laws, for at the present our legislators are generally ardent political aspirants, men whose hearts and affections are placed upon official preferment, and the idea has become crystalized into their actions and speech, and this makes them indifferent in regard to the public health, and they give hygiene little or no thought, as their desire for office prompts them to study the interests of the various monetary corporations of the country, knowing if they can curry favor with the money power they can easily step into office. But they talk fluently of reforms in this and that department of State government, of reducing expenses that the taxes may be lessened and labor made more remunerative. In fact, they use all the sophistry and every subterfuge known to politicians to make the people believe them to be most zealous advocates. But when elected and clothed with official power, they favor measures that will extract money from the pockets of their constituents by geometrical progression.

But in part this is necessary, as the public charities must be maintained and our charitable institutions enlarged, as the number of our unfortunates are increasing, and they must be cared for, so long as they are found among us. Therefore, we think it would be wise on the part of the public to invoke the aid of Hygeia, to follow her dictations, that they may be enabled to remove the causes that bring such afflictions, such suffering, and pains, which are worse than untimely deaths. This can and undoubtedly will be accomplished in the course of a few generations by a thorough application of the practical principles of hygiene in every phase of life, which will remove the necessity for public charities, and those magnificent buildings that we point to with pride will be abandoned and left to the occupancy of owls and bats. And after the lapse of a century or two the stone and bricks that compose these grand designs of an architect, that we call almshouses and asylums, will be pointed out as belonging to a heathenish age or people. But in attempting to establish these important and much needed reforms, sanitarians have much opposition to contend with, but at this they are not discouraged. They feel that it is only a trial of their patience, and devotion to the interests of their fellow men, as they know all that can or ever will result in great good to man, has always and perhaps always will meet with decided opposition. As all true reforms are opposed, and often by those from whom we would have expected encouragement, so in the advancement of sanitary science opposition is found from men in every condition in life, and they oppose sanitary work in every conceivable way. There are men who can, without the blush of shame mantling their cheeks, declare that sanitary work is an expense without a profit, and that there can be no good derived from it. Must I say it? yes, there are doctors, medical men, who are jealous of sanitary science, and only do what they are compelled to do by law to forward sanitary work, and often what they do is done in a very imperfect way, saying the law has no right to demand work of them without pay, and that if sanitary science is fully carried out in the near future their business will be

done, that the time and money they have spent in acquiring their medical education will be wasted or thrown away. They forget that they are dependent upon the public for support in their business, and that it is their unbounded duty to protect the public in every possible way, and that if they had to sustain such loss it would be for the public good. Then that such a day may be hastened all humanitarians should earnestly engage in the work with sanitarians in advocating the adoption by the public the full and complete practical work of hygienic science, that usher in the dawn of a new day, when the sunshine will add new luster to life's pathway, for the reason that the people are free from vice, pain, sickness and untimely death, and are enjoying the blessings of Hygeia. And then, and not till then, will the grumbling of the narrow, selfish-minded of our race be left in the rear, and their mutterings and grumbings be shut out from ears forever, by the elastic tread and joyous salutations of the host that are marching back to Edenic days.

# LIST OF PHYSICIANS.

ABBREVIATIONS—R., for regular; E., for eclectic; H., for homeopathic; P. M., for physio-medical; N. R., for not reported; D., for diploma; figures, number of years' practice.

This list is furnished by county health officers, and any mistakes that may occur are attributable to them.

The names of the county health officers are printed in capitals.

## Adams County.

Name.	Post Office.	School.	Name.	Post Office.	School.
Aspy, Hiram M.	Geneva	R. 3	Kuntz, Christina	Berne	P. M. 10
Boyers, J. S.	Decatur	R. D	McMillen, W. W. P.	Decatur	R. D
Broadwell, Wilmer	Berne	R. D	Meyer, Henry	Decatur	H. D
Coverdale, J. S.	Decatur	R. D	Mann, Jesse E.	Decatur	N. R. D
Costello, Henry F.	Decatur	R. D	Mann, N. D., Mrs.	Decatur	N. R. D
Dorwin, T. T.	Decatur	H. 3	Mendenhall, F. M.	Berne	E. 3
Freeman, B. F.	Decatur	R. D	Mentzer, S. E.	Monroe	R. D
Ford, A. C.	Geneva	E. 3	Rainier, C. F.	Monroe	R. 10
Holloway, A. G.	Decatur	R. 3	Ralston, S. G.	Geneva	R. 3
Harper, J. L.	Pl't Mills	R. 10	Sprunger, Peter A.	Berne	H. 10
Houghton, A. K.	Linn Grove	R. 3	Trout, D. G. M.	Decatur	R. D
Hill, J. C.	Pl't Mills	P. M. 10	Thomas, P. B.	Decatur	R. D
Hughes, Alex.	Monroe	P. M. 10	Zimmerman, C. A.	Berne	R. 3
JELLEFF, C. A.	Decatur	R. D			

Regular, 18; Eclectic, 2; Homeopathic, 1; Physio-Medical, 3; not reported, 2.

## Allen County.

Adams, Horace E.	Woodburn	R. 10	Martz, Christ.	Fort Wayne	H. 10
Allen, D. M.		R. 10	McCausland, J. W.	Fort Wayne	R. D
Barnett, W. F.	Fort Wayne	R. D	McCaskey, G. W.	Fort Wayne	R. D
Blade, P.	Fort Wayne	E. 10	McCullough, T. P.	Fort Wayne	R. D
Bilderback, J. W.	New Haven	R. 10	McCullough, Howard	Fort Wayne	R. D
Bowen, G. W.	Fort Wayne	H. D	McDowell, H. C.	Arcola	R. 10
Buchman, A. P.	Fort Wayne	R. D	McCormick, Thos.	Poe	R. D
Bruebach, G. T.	Fort Wayne	R. D	McHenry, J. D.	Maples	R. D
Brudi, G. G.	New Haven	R. D	McOscar, E. J.	Fort Wayne	R. D
Chambers, J. D.	Fort Wayne	R. D	Nieschang, C. F.	Fort Wayne	R. D
Chandler, Geo. E.	Fort Wayne	H. D	Null, Lycurgus	New Haven	E. D
Connelly, W. A.	Monroeville	H. D	Omo, Jos. H.	Harlan	R. D
Cosgrove, F. K.	Harlan	R. D	Porter, M. F.	Fort Wayne	R. D
DILLS, T. J.	Fort Wayne	R. D	Proegler, Carl	Fort Wayne	R. D
Dinnen, J. M.	Fort Wayne	R. D	Pozneer, G. W.	Fort Wayne	R. D
Engle, A.	Monroeville	R. 10	Ross, Geo. A.	Fort Wayne	H. D
Fiser, C. M.	Fort Wayne	R. D	Rosenthal, J. M.	Fort Wayne	R. D
Ferguson, W. T.	Fort Wayne	R. D	Rousch, A. J.	Fort Wayne	R. 10
Greenwell, F.	Huntertown	R. D	Reed, Ezra	Nine Mile	R. 10
Greenwalt, G. L.	Fort Wayne	R. D	Ruhl, Wm. De La	Sheldon	R. D
Gould, H.	Fort Wayne	R. D	Smith, J. L.	Hoagland	E. D
Gordon, G. W.	Wall n	R. D	Smith, J. L.	Fort Wayne	R. D
Guenther, G. W.	Harlan	R. 10	Stemen, C. B.	Fort Wayne	R. D
Green Frances M.	Fort Wayne	H. D	Stemen, Geo. C.	Fort Wayne	R. D
Gard, B.	Fort Wayne	E. D	Stemen, Geo. B.	Fort Wayne	R. D
Gregg, J. S.	Fort Wayne	R. D	Stultz, J. E.	Fort Wayne	R. D
Harris, L. P.	Fort Wayne	H. D	Sturgis, L. T.	Fort Wayne	R. D
Hathaway, G. W.	Fort Wayne	R. D	Siver, E. L.	Fort Wayne	R. D
Hesler, G. F.	Fort Wayne	R. D	Seaton, Jn. R.	Fort Wayne	R. 10
Hathaway, Mary F.	Fort Wayne	R. D	Shutt, L. C.	Fort Wayne	R. D
Helrick, Jacob	Fort Wayne	R. D	Shutt, Jno. M.	Harlan	N. R. 3
Jones, J. H.	Fort Wayne	N. R. 10	Swift, C. L.	Harlan	R. D
Knobe, Robert S.	Fort Wayne	R. D	Sledd, S. D.	Nine Mile	R. D
Kryde, J. L.	Cedarville	R. D	Sweringen, H. V.	Fort Wayne	R. D
Lines, R. L.	Heller's Corners	R. D	Thayer, Fred.	Fort Wayne	R. D
Leiter, Chas. A.	Monroeville	R. D	Van Buskirk, A. E.	Fort Wayne	R. D
Laubach, A. J.	Fort Wayne	R. D	Virgil, Thos.	Fort Wayne	R. D
Lamb, B. F.	Academy	R. D	Wherry, Wm. P.	Fort Wayne	R. D
Myers, Isaac N.	Maples	R. D	Woodworth, B. S.	Fort Wayne	R. D
Myers, Wm. H.	Fort Wayne	R. D	Williamson, M. F.	New Haven	R. D
Myers, Herschel L.	Fort Wayne	R. D	Wheelock, K. R.	Fort Wayne	R. D
Martin, J. W.	Fort Wayne	R. D	Worley, Geo. N.	Poe	R. D
Metcalf, S. C.	Fort Wayne	R. D	Wagner, H. G.	Fort Wayne	N. R. 10
Murphy, Geo.	Leo	R. D	Wagner, Amelia	Fort Wayne	N. R. 10
Morrison, T. R.	Heller's Corners	R. D	Younz, J. W.	Fort Wayne	R. D

Regular, 77; Eclectic, 4; Homeopathic, 6; not reported, 4.

*Bartholomew County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
ARWINE, J. S. . . .	Columbus . . .	R. 10	Kincaid, Simpson F. . .	Taylorsville . . .	E. D
Armer, D. S. . . .	Columbus . . .	R. D	Lopp, Wm. H. . . .	Columbus . . .	R. D
Allen, Wm. H. . . .	Waymansville . .	R. 10	Lawrence, Wm. H. . .	Jonesville . . .	E. 3
Butler, Wm. H. . . .	Columbus . . .	R. D	Linton, Sam M. . . .	Columbus . . .	R. 10
Banker, A. J. . . .	Columbus . . .	R. D	Lopp, John W. . . .	Jonesville . . .	R. D
Barrett, S. J. . . .	Columbus . . .	R. 10	Martin, T. J. . . .	Jonesville . . .	P. M. D
Biddinger, S. W. . .	Waynesburg. . .	E. 10	Moore, Chas. A. . . .	Columbus . . .	E. D
Beek, W. H. . . .	Hartsville . . .	R. D	Mennett, O. H. . . .	Jonesville . . .	R. D
Boynnton, Chas. S. .	Hope. . . .	R. D	Morris, Sam H. . . .	Columbus . . .	R. 3
Butler, Chas. H. . .	Clifford . . .	R. 10	McLeod, A. J. . . .	Columbus . . .	R. D
Banks, Wm. H. . . .	Waymansville . .	R. 10	McCoy, Geo. T. . . .	Columbus . . .	R. D
Bernard, Geo. W. . .	Taylorsville . . .	H. D	Norton, F. D. . . .	Petersville. . .	R. D
Carmichael Wm. T. .	Walesboro. . .	P. M. D	Newton, W. T. . . .	Hope. . . .	R. D
Crisler, Joseph B. . .	Newbern. . . .	E. 10	Rice, Alfred . . . .	Columbus . . .	H. D
Cosby, Geo. O. . . .	Burnsville. . . .	R. D	Roope, R. H. . . .	Columbus . . .	R. D
Clark, Isaac S. . . .	Columbus . . .	R. 10	Richard, F. B. . . .	Taylorsville . .	R. D
Clark, Geo. E. . . .	Waynesburg. . .	R. D	Regennas, Eug. G. . .	Hope. . . .	R. D
Davis, Jos. H. . . .	Azalia . . . .	R. 10	Roesgen, John P. . .	Columbus . . .	R. 10
Elrod, Moses N. . . .	Hartsville . . .	R. D	Shane, Thos. A. . . .	Columbus . . .	R. D
Eads, Erastus . . .	Newbern. . . .	R. D	Stapp, Simeon . . . .	Hope. . . .	R. 10
Galloway, C. E. . . .	Hartsville . . .	R. D	Voris, Sam M. . . .	Columbus . . .	R. D
Hudson, Jas. B. . . .	Columbus . . .	E. D	Wisenburg, John. . .	Waymansville. .	R. 10
Howe, Orin E. . . .	Taylorsville . . .	R. D	Winterrowd, N. S. . .	Hope. . . .	R. D
Hauzer, Z. H. . . .	Columbus . . .	R. D	Williams, John B. . .	Clifford. . . .	P. M. D
Hawley, K. D. . . .	Elizabethtown. .	R. D	Wright, John F. . . .	Columbus . . .	R. D
Holder, R. E. . . .	South Bethany . .	R. D	Wood, James W. . . .	Elizabethtown. .	R. D
Hood, Mary L. Gay . .	Columbus . . .	P. M. D			

Regular, 41: Homeopathic, 2: Physio-Medical, 4: Eclectic, 5.

*Benton County.*

Boice, A. C. . . .	Earl Park . . .	R. 3	Johnson, Finly P. . .	Earl Park . . .	R. D
Bristow, Jasper . . .	Templeton . . .	R. 3	Kinney, John Fenton. .	Oxford . . . .	E. D
Beard, J. M. G. . . .	Ambia . . . .	R. D	Kolb, Jonathan . . .	Oxford . . . .	R. 10
Barlocher, Finton . .	Earl Park . . .	R. D	MAVITY, JAMES S. . .	Fowler . . . .	R. D
Christley, J. B. . . .	Boswell . . . .	R. 10	McConnell, Henry C. .	Oxford . . . .	E. D
Cook, Clark . . . .	Fowler . . . .	R. D	Purdy, A. J. . . .	Fowler . . . .	R. D
Fall, Charles W. . . .	Templeton . . .	R. 3	Roberts, Samuel R. . .	Atkinson . . .	R. 10
Green, John W. . . .	Boswell . . . .	R. 3	Rodman, James M. . .	Fowler . . . .	R. 10
Green, Nellie E. . . .	Fowler . . . .	R. 3	Thompson, Thomas J. .	Otterbein . . .	R. D
Gray, James A. . . .	Otterbein . . .	R. D	Wells, Allen W. . . .	Swanington . .	R. D
Gray, William H. . . .	Wadena . . . .	E. D	Whitcomb, James H. .	Boswell . . . .	R. 3
Hunter, Abram F. . .	Raub . . . .	E. D			

Regular, 19: Eclectic, 4.

*Blackford County.*

Clouser, N. D. . . .	Hartford City . .	R. 10	McFarland, J. E. . .	Mill Grove . . .	E. 3
DAVINSON, J. C. . .	Hartford City . .	R. D	Morrison, J. A. . . .	Montpelier . . .	R. D
Dill, N. C. . . .	Montpelier . . .	R. D	Sellers, Jno. . . .	Montpelier . . .	R. 3
Drayer, Peter . . . .	Hartford City . .	R. D	Sage, John W. . . .	Hartford City . .	E. D
Harrold, Jno. R. . . .	Roll . . . .	R. D	Wheeler, W. H. . . .	Hartford City . .	H. D
Knabe, Theo. . . .	Hartford City . .	H. D	White, Robt . . . .	Montpelier . . .	H. 10
Landon, L. C. . . .	Priam . . . .	R. 10	Wilt, W. W. . . .	Montpelier . . .	R. D
Mason, C. R. . . .	Hartford City . .	R. D			

Regular, 10: Eclectic, 2; Homeopathic, 3.

*Boone County.*

Austin, T. H. . . .	Jamestown . . .	E. D	Curryer, W. F. . . .	Thorntown . . .	E. D
Bunnell, M. H. . . .	Lebanon . . . .	R. D	Cotten, H. T. . . .	Zionsville . . .	R. D
Bunnell, T. A. . . .	New Brunswick . .	R. 3	Clark, A. J. . . .	Zionsville . . .	R. D
Burk, G. L. . . .	Jamestown . . .	R. 10	Coone, H. N. . . .	Lebanon . . . .	H. D
Boyd, J. M. . . .	Thorntown . . .	R. D	Deacon, A. B. . . .	Elizaville . . .	R. D
Benington, A. M. . .	Lebanon . . . .	R. 10	Davis, D. L. . . .	Thorntown . . .	R. 10
Brown, E. L. . . .	Thorntown . . .	E. D	Dunnington, A. . . .	Thorntown . . .	R. 10
Ball, J. P. . . .	Lebanon . . . .	E. D	Everette, W. E. . . .	White Lick . . .	R. D
Brindell, B. T. . . .	Kimberlin . . .	P. M. D	Finch, A. M. . . .	Jamestown . . .	R. 3
Banta, S. J. . . .	Jamestown . . .	R. 10	Garrison, J. L. T. . .	Lebanon . . . .	R. 10

*Boone County—Continued.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Gordan, T. W. . . .	White Lick . . .	R. D	Reagan, Jesse . . .	Reese's Mills . .	R. 10
Holloway, J. H. . .	Lebanon . . . .	E. 10	Roberts, Jos. D. . .	Whitestown . . .	E. D
Hardy, J. S. . . . .	Whitestown . . .	R. D	Roberts, — . . . .	Whitestown . . .	E. D
HEADY, W. S. . . .	Jamestown . . .	R. D	Smith, Jno. W. . . .	Lebanon . . . . .	R. D
Harrison, T. H. . .	Lebanon . . . . .	R. D	Smith, C. H. . . . .	Lebanon . . . . .	R. D
Hamilton, J. A. . .	Advance . . . . .	E. 10	Scull, D. C. . . . .	Lebanon . . . . .	R. 3
Hawke, Jas. E. . .	Thorntown . . .	E. 10	Steelsmith, J. M. .	Elizaville . . . .	R. D
Jones, R. E. . . . .	Lebanon . . . . .	R. D	Shulse, W. H. . . .	Lebanon . . . . .	R. D
Kellogge, U. P. . .	Lebanon . . . . .	E. D	Turner, T. S. . . .	Lebanon . . . . .	P. M. D
Leach, J. T. . . . .	New Brunswick .	R. 10	Trobridge, Reese . .	Lebanon . . . . .	R. D
Lane, T. H. . . . .	Lebanon . . . . .	R. D	Utter, Jos. A. . . .	Thorntown . . . .	H. D
Myers, J. W. . . . .	Terhune . . . . .	R. D	Umberhine, C. D. .	Reese's Mills . . .	R. D
Miller, A. O. . . . .	Lebanon . . . . .	R. D	Van Nuys, D. H. . .	Lebanon . . . . .	R. D
McGee, J. A. . . . .	Rosstown . . . .	P. M. D	Van Ausdall, G. M.	Jamestown . . . .	R. D
Orear, J. H. . . . .	Jamestown . . .	R. 10	Ware, W. H. . . . .	Cason . . . . . .	R. 10
Porter, A. G. . . . .	Lebanon . . . . .	R. D	Walker, D. R. . . .	Reese's Mills . . .	R. D
Porter, John R. . .	Lebanon . . . . .	R. 3	Whiteneck, J. H. .	Zionsville . . . .	R. D
Purdy, J. C. . . . .	Kimberlin . . .	P. M. 3	Watterous, H. W. .	Elizaville . . . .	R. D
Rose, M. H. . . . .	Thorntown . . .	R. D			

Regular, 41; Eclectic, 10; Physio-Medical, 4; Homeopathic, 2.

*Brown County.*

Campbell, Jas. B. . .	Bean Blossom . .	10	Ralphy, A. J. . . . .	Nashville . . . .	R. D
Browning, Nathan .	Needmore . . . .	R. 3	SPENCER, A. C. . .	Bean Blossom . .	R. D
Genolin, J. F. . . .	Nashville . . . .	R. D	Taggart, C. T. . . .	Nashville . . . .	R. 10
Griffitt, A. S. . . .	Story . . . . . .	R. D	Ward, J. G. . . . .	Bean Blossom . .	R. 3
Leonard, J. H. . . .	Elkinsville . . .	R. 10	Warring, T. E. . . .	Belmont . . . . .	R. 3
Moser, J. P. . . . .	Spearsville . . .	R. D	Wilson, S. C. . . . .	Pike's Peak . . .	R. 10
Mossiss, Stephen . .	Schooner . . . .	R. D			

Regular, 12; not reported, 1.

*Carroll County.*

Angell, Charles. . .	Pittsburg . . . .	R. D	Morrow, Jas. L. . .	Delphi . . . . .	R. D
Angell, Charles E. .	Delphi . . . . .	R. D	Nice, F. F. . . . .	Deer Creek . . . .	E. 3
Armstrong, F. G. . .	Camden . . . . .	R. 10	Noland, S. T. . . .	Delphi . . . . .	R. D
Armstrong, Ellis W.	Camden . . . . .	R. D	Payton, W. B. . . .	Carroll . . . . .	E. D
Beck, Elias W. H. . .	Delphi . . . . .	R. D	Plank, William H. .	Deer Creek . . . .	R. D
Blanchard, James R.	Delphi . . . . .	R. D	Robinson, Frank H.	Delphi . . . . .	H. D
Bradfield, B. D. . .	Deer Creek . . .	R. D	Scholl, C. E. . . . .	Camden . . . . .	R. D
Carter, Julius D. . .	Camden . . . . .	R. 10	Sharrer, W. F. . . .	Delphi . . . . .	R. D
Cochran, Isaac N. .	Radnor . . . . .	R. D	Shultz, Francis A. .	Delphi . . . . .	E. D
Camp, Charles . . .	Camden . . . . .	E. D	Shultz, Judson J. .	Delphi . . . . .	E. D
Chittick, Charles. .	Burlington . . .	R. D	Smith, Wickliffe . .	Delphi . . . . .	R. D
Cromer, J. H. . . .	Flora . . . . .	E. D	Snyder, B. F. . . .	Camden . . . . .	R. D
Cook, A. J. . . . .	Flora . . . . .	E. D	Souder, Cloyd L. .	Burrows . . . . .	R. D
Doane, George M. . .	Burlington . . .	R. 10	Stewart, Wilson J. .	Rockfield . . . .	R. D
Greer, Joshua G. . .	Patton . . . . .	P. M. 10	Speitel, Henry B. .	Flora . . . . .	E. 10
Hall, J. D. . . . .	Camden . . . . .	R. D	Tidrick, R. R. . . .	Bringinghurst . .	R. D
Jackson, C. P. . . .	Bringinghurst . .	R. 10	Trobaugh, W. A. . .	Cutler . . . . .	R. D
Kenward, J. L. . . .	Yeoman . . . . .	R. D	WALKER, E. . . . .	Delphi . . . . .	E. D
Landes, B. F. . . .	Burlington . . .	E. D	Wirt, John H. . . .	Flora . . . . .	E. D
Loop, W. M. . . . .	Deer Creek . . .	R. D	Wilson, Robert I. .	Lockport . . . . .	R. 10
Lyon, F. P. . . . .	Carroll . . . . .	R. D	Wright, John A. . .	Burlington . . . .	E. D
Moore, A. G. . . . .	Carroll . . . . .	R. 10			

Regular, 29; Eclectic, 12; Physio-Medical, 1; Homeopathic, 1.

*Cass County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Abbott, Abner	Logansport	E. 10	Loop, Z. U.	Galveston	R. D
Baldwin, Thornburg	Galveston	R. D	Lybrook, Wm. E.	Young America	R. D
Ballard, J. W.	Logansport	R. D	Lynas, J. B.	Logansport	10
Banta, Henry J.	Logansport	R. D	McKee, Chas. Wm.	Logansport	R. D
Beall, John S.	Galveston	E. D	Million, David	Royal Center	E. D
Bell, Wm. H.	Logansport	R. D	Morris, James M.	Twelve Mile	E. 10
Blew, Peter M.	Logansport	E. 10	Myers, Alpheus	Logansport	E. D
Bowers, E. J.	Logansport	E. 10	Neff, J. N.	Walton	R. D
Brown, Nathaniel	Galveston	E. 3	Parks, Chas. D.	Young America	E. D
Burton, John J.	Royal Center	E. D	Parish, Harrison	Montez	E. 10
Buehahn, F. A.	Logansport	R. D	Powell, J. Z.	Logansport	R. D
Cady, Nelson W.	Logansport	R. D	Pickett, John J.	Dow	E. 3
Carpenter, L. W.	Logansport	H. D	Pickett, Cyrus	Pine	E. D
Chord, A. M.	Logansport	E. D	Quick, L. L.	New Waverly	R. D
Clevenger, B. S.	Logansport	E. 10	Quick, Raper H.	New Waverly	R. D
Coleman, Asa	Logansport	R. D	Reishausen, Elenor	Logansport	R. D
Downey, Jasper A.	Logansport	E. D	Shultz, John B.	Logansport	E. D
Dutchess, Chas. P.	Walton	R. D	Shultz, John H.	Logansport	E. D
Eckert, Daniel H.	Nebo	E. D	Skinner, H. D.	Twelve Mile	R. D
Fitch, Graham N.	Logansport	R. D	Simmon, Lewis A.	Crittenden	R. 3
Fouts, David N.	Royal Center	E. 10	Smith, John S.	Lincoln	E. D
Graves, Arthur E.	Galveston	E. D	Sterrett, Jos. E.	Logansport	R. D
Hallanan, Joseph	Logansport	R. D	Stolze, J.	Logansport	E. D
Hattery, Hiram	Logansport	R. D	Stevens, Benj. C.	Logansport	R. D
Herrmann, John	Logansport	R. D	Talbott, J. H.	Logansport	R. D
Hunter, Wm. B.	Anoka	R. D	Taylor, Joseph L.	Logansport	E. D
IRON, JOHN W.	Logansport	H. 3	Taylor, Caroline	Logansport	E. 3
Jordon, M. A.	Logansport	E. D	Thomas, C. L.	Logansport	R. D
Justice, James M.	Logansport	R. D	Thomas, James	Royal Center	R. 10
Landry, S. F.	Galveston	R. 10	Williams, James A.	Logansport	R. D
La Rose, Noah J.	Altaner	E. D	Wills, John B.	Lincoln	R. D
Lester, Henry C.	Logansport	E. D			

Regular, 32; Eclectic, 28; Homeopathic, 2; not reported, 1.

*Clark County.*

Allhands, David S.	New Washington	E. 3	McClure, Sidney C.	Jeffersonville	R. D
Adair, Samuel L.	New Washington	R. D	McClure, Jesse D.	Jeffersonville	R. D
Bassard, Clemmons	Jeffersonville	H. D	McBride, Charles R.	Jeffersonville	R. D
Beckwith, Lod W.	Jeffersonville	R. D	McCormick, Joseph C.	Jeffersonville	R. D
Bryant, Allen	Jeffersonville	N. R. 10	McGlenn, Wm. P.	Henryville	R. D
Brunner, Emory W.	Jeffersonville	R. D	New, Richard B.	Jeffersonville	E. D
Brunner, Jacob	Utica	R. 10	Oglesby, J. W.	Bethlehem	R. D
Casby, Mary	Jeffersonville	N. R. 10	Poundexter, Jno. M.	Utica	R. D
Coombs, David H.	Charlestown	R. D	Peyton, David C.	Jeffersonville	R. D
Covert, George M.	Sellersburg	R. D	Reynald, James M.	Memphis	R. D
Carr, Francis	Oregon	R. 10	Russe, James R.	Jeffersonville	R. D
Duerson, Wm. T.	Bethlehem	R. 3	Riddell, Isaac N.	Jeffersonville	R. D
FOOTS, Wm. D.	Jeffersonville	R. 10	Sanderson, Thomas	Charlestown	R. D
Field, Nathaniel	Jeffersonville	R. D	Stalker, Benjamin T.	New Providence	R. D
Ferguson, Henry H.	Henryville	R. D	Sheets, Wm. H.	Jeffersonville	R. D
Field, Davis L.	Jeffersonville	R. D	Scull, Benjamin F.	Bethlehem	R. 10
Graham, Thomas A.	Jeffersonville	R. D	Taggart, Samuel C.	Charlestown	R. D
Haymaker, Geo. W.	Charlestown	R. D	Taggart, John F.	Owen	R. D
Haus, Augustus P.	Sellersburg	E. D	Veasey, T. Reid	Charlestown	R. D
Jones, Cadwallader	New Washington	E. D	Watkins, E. M.	Jeffersonville	R. D
Klein, John W.	Sellersburg	R. D	Wisner, W. E.	Henryville	R. D
Loomis, John	Jeffersonville	H. 10	Work, Will F.	Charlestown	E. D
McCoy, Wm. N.	Jeffersonville	R. D	Williams, Louis L.	Utica	R. D
McKinney, Martin V.	Jeffersonville	R. D	Wells, Francis M.	Sellersburg	R. D
McClure, David	Jeffersonville	R. 10	Zurner, Joseph	Jeffersonville	R. D

Regular, 41; Homeopathic, 2; Eclectic, 5; not reported, 2.

*Clay County.*

Allen, Hiram P.	Bowling Green	R. 3	Briley, A.	Coffee	R. 10
Brouillette, S. L.	Clay City	R. D	Carney, J. W.	Staunton	R. 10
Bartholomew, N. B.	Poland	R. 3	Cushman, D. W.	Cloverland	R. D
Brown, W. B.	Clay City	R. 10	Chamberlain, W. F.	Poland	R. D
Byers, L. S.	Staunton	R. 3	Chamberlain, W. L.	Poland	R. 3
Byers, L. G.	Carbon	R. D	Culbertson, R. N.	Brazil	R. D
Berne, S. P.	Clay City	R. D	Dillman, M. S.	Staunton	R. D
Black, S. D.	Brazil	R. D	Elliott, T. A.	Poland	R. D



*Clay County—Continued.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Erskin, Amos C.		R. D	Nobb, A. H.	Hoosiersville.	R. 10
Freed, M. A.	Clay City	R. D	Phipps, J. J.	Clay City	R. 10
Finley, G. W.	Harmony	R. 3	Pell, G. M.	Carbon	R. D
Green, T. A.	Ashboro	R. 10	Price, J. M.	Brazil	R. 10
Gerstmyer, J.	Brazil	R. 3	Rundell, A. E.	Center Point	R. D
Griffith, L.	Saline City	R. D	Smith, J. F.	Brazil	R. D
Gantz, R.	Saline City	R. 10	Spellbring, B. F.	Knightsville	E. 3
GLASGO, T. A.	Brazil	R. 3	Stone, W. R.	Poland	R. 10
Gifford, J. C.	Brazil	R. D	Siddons, J. O.	Harmony	R. 10
Hawkins, W. B.	Brazil	R. 10	Swinehart, M. H.	Ashersville	R. 10
Hale, L. A.	Martz	R. 10	Siner, F. W.	Harmony	R. D
Holmes, B. R.	Ashersville	R. D	Turner, Lewis	Traveling	R. D
Hamilton, William		R. D	Tulley, A. F.	Brazil	R. D
Howser, James		R. D	Thornton, F. G.	Knightsville	R. 3
James, O.	Cory	R. D	Talbot, E. P.	Bowling Green	R. D
Leachman, J. M.	Bowling Green	R. 10	Vansandt, W. H.	Carbon	R. D
Modesitt, J. A.	Cory	R. D	Williams, J.	Bowling Gr'n. P.	M. 10
McElvey, Robert		R. D	Woolf, C.	Clay City	R. D
Morton, W. C. P.	Cardonia	R. 3	Williams, J. A.	Clay City	R. D
Moss, J. R.	Center Point	R. D	Willigman, C. H.	Clay City	R. D
McCullough, F. R.	Staunton	R. D	Zook, D.	Clay City	R. D
McCullum, R.	Bowling Green	R. D			

Regular, 56; Eclectic, 1; Physio-Medical, 1.

*Clinton County.*

Abston, Jesse M.	Michigantown	R. D	Lovell, Charles H.	Kirklin	E. D
Adams, James M. C.	Frankfort	R. D	Milburn, Robert C.	Colfax	R. 3
Brown, Geo. W.	Frankfort	R. D	Milburn, Joseph E.	Colfax	R. 10
Bogan, Elisha W.	Kirklin	R. D	Matter, Thomas S.	Mulberry	E. D
Bowers, Valentine	Michigantown	R. D	Morrison, Owen A. J.	Middlefork	R. D
Coon, Hiram J.	Colfax	R. D	Martin, M. L.	Forest	R. 10
Canfield, Moses S.	Frankfort	E. D	Miller, Elijah	Sedalia	E. 10
Cripe, Daniel E.	Frankfort	E. 10	McMurray, James S.	Frankfort	R. D
Cooper, William E.	Hillisburg	P. M. D	McGuire, Wm. H.	Frankfort	E. D
Cooper, Wilson T.	Frankfort	R. D	PALMER, R. F.	Frankfort	R. D
Chittick, Andrew J.	Hillisburg	R. D	Parker, Joseph	Colfax	R. D
Cox, T. B.	Frankfort	R. D	Randall, Wm. B.	Hillisburg	R. 10
Coble, Albert H.	Frankfort	R. D	Sims, Stephen B.	Frankfort	R. D
Douglass, Isaac W.	Michigantown	R. D	Schwinn, Evan E.	Kirklin	R. D
Douglass, Samuel	Killmore.	R. 10	Saylor, Andrew J.	Frankfort	E. D
Davis, Newton C.	Frankfort	H. D	Smith, Wm. G.	Scircleville	R. 3
Earhart, Isaac S.	Mulberry	R. D	Seawright, John P.	Moran	R. D
Fisher, Samuel B.	Rossville	E. 10	Strange, Wm.	Frankfort	R. 10
Fisher, John J.	Rossville	R. D	Stow, James E.	Rossville	R. D
Fall, Wm. D.	Kirklin	R. 10	Sigler, John N.	Sedalia	R. 3
Gard, Oliver	Frankfort	R. D	Tharp, Levi	Boyleston	R. 3
Gentry, James M.	Frankfort	R. D	Vale, H. W.	Colfax	R. D
Hornaday, Wm. H.	Forest	R. D	Wise, James B.	Frankfort	H. D
Huntsinger, Eli	Frankfort	H. D	Wilson, Alexander M.	Frankfort	R. 10
Knapp, S. O.	Frankfort	R. D	Yonkey, Wm. P.	Rossville	R. D
Koons, Monroe P.	Mulberry	R. D	Youndt, Albert W.	Mulberry	R. D
Loftin, John	Frankfort	R. D			

Regular, 40; Eclectic, 9; Homeopathic, 3; Physio-Medical, 1.

*Crawford County.*

Anderson, John W.	Milltown	R. D	Holland, Wm.	Milltown	R. 10
Baylor, Geo. W.	Milltown	R. D	Hollcroft, W. R.	Alton	R. 10
Bird, Wm. C.	English	R. 10	Kimes, Dan'l.	Leavenworth	R. 10
Bobbitt, John H.	Boston Station	R. 10	King, N. W.	Taswell	R. 10
Brown, Sylvester	Boston Station	R. 10	Knight, Jno. B.	Mt. Prospect.	R. 10
Bullington, Wm. H.	West Fork.	R. 10	Luckett, Chas. D.	Boston Station	R. D
Byrn, Spencer	Marengo	R. D	McCartney, J. C.	West Fork.	R. D
Chambers, S. B.	Marengo.	H. D	Merriles, Wm. M.	Leavenworth	H. 10
Cole, Wm. A.	English	R. D	Murphy, Lewis H.	Alton	R. D
Courtney, Thos.	Rio. ville.	R. 3	SETSER, H. H.	Leavenworth	R. D
Gibbs, John H.	Milltown	R. D	Stewart, Lewis B.	Marengo.	H. 10
Gobbel, Fred'k R.	Grantsburg	R. 3	Vandiver, Joel.	Mt. Prospect.	R. D
Hammond, Jno. M.	English	R. 3	Walls, Jno. W.	Boston Station	R. 3
Hammond, H. C.	English	R. 3	Weathers, Jno. F.	Marengo.	R. D
Hazelwood, Jno.	Boston Station	R. D			

Regular, 26; Homeopathic, 3.

*Daviess County.*

<i>Names.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Names.</i>	<i>Postoffice.</i>	<i>School.</i>
Anderson, W. B. . . .	Washington . . .	R. D	Millis, E. D. . . . .	Plainville . . . .	R. 10
Achor, J. M. . . . .	Cornetville . . .	R. 10	Marlow, J. W. . . .	Eaglesville . . . .	E. D
Avery, W. R. . . . .	Washington . . .	R. 1	McKittrick, O. H. .	Plainville . . . .	R. 10
Bigham, A. A. . . .	Montgomery. . .	R. D	Oppelt, E. A. . . .	Cannelburg . . . .	R. D
Burrill, H. H. . . .	Washington . . .	R. 10	Peaks, J. F. . . . .	Cumback . . . . .	R. D
Burriss, Levi . . . .	Alfordsville . . .	H. D	Peck, S. W. . . . .	Washington . . . .	R. D
Carter, D. R. . . . .	Odon. . . . .	R. 3	Sears, Barton. . . .	Odon. . . . .	R. 10
Clark, J. W. . . . .	Glendale. . . . .	E. D	Scott, Thomas . . .	Odon. . . . .	R. D
Clayton, Q. . . . .	Washington . . .	R. 10	Ragsdale, M. H. . .	Glendale . . . . .	E. 3
Cullner, S. C. . . .	Eaglesville . . .	R. D	Ray, Thomas. . . .	Epsom . . . . .	R. 3
Culiner, G. F. . . .	Odon. . . . .	R. 3	Scudder, C. P. . . .	Washington . . . .	R. D
Dagley, E. L. . . . .	Washington . . .	R. 10	STROUSE, W. H. H. .	Washington . . . .	H. 10
Dearmir, John . . .	Odon. . . . .	R. 10	Scanlon, M. D. . . .	Washington . . . .	R. D
Faith, A. H. . . . .	Plainville . . . .	R. 0	Sears, T. M. . . . .	Elnora. . . . .	R. D
Fitzgibbon, John. .	Washington . . .	R. D	Scudder, J. A. . . .	Washington . . . .	R. D
Gere, Henry . . . .	Washington . . .	R. D	Scudder, Charles . .	Washington . . . .	R. D
Hobbs, W. P. . . . .	Ragle-ville . . .	E. 10	Smith, D. J. . . . .	Odon. . . . .	R. D
Harned, Francis M. .	Washington . . .	R. D	Tolliver, M. P. . . .	Elnora. . . . .	R. 10
Jones, J. N. . . . .	Washington . . .	R. D	Taylor, Harvey. . .	Raglesville . . . .	R. D
Kempf, Andrew . . .	Washington . . .	R. 10	Wolf, H. . . . .	Washington . . . .	R. D
Keith, B. F. . . . .	Edwardsport . .	R. D	Willeford, G. W. . .	Glendale. . . . .	R. D
Killion, John N. . .	Cornetsville . . .	R. 10	Walls, W. B. . . . .	Alfordsville . . . .	R. 10
Lane, A. K. . . . .	Odon. . . . .	R. 10	Willeford, W. C. . .	Montgomery. . . .	R. D
Moore, J. L. . . . .	Washington . . .	R. D	Whittemore, F. J. .	Washington . . . .	R. D

Regular, 42; Homeopathic, 2; Eclectic, 4.

*Dearborn County.*

Barkley, J. Marshall .	Farmers' Retreat	R. D	Lamb, James . . . .	Aurora . . . . .	R. D
Bond, R. C. . . . .	Aurora . . . . .	R. D	Lowden, L. A. . . .	Wilmington . . . .	R. 11
Bond, E. P. . . . .	Lawrenceburg . .	R. 10	Lazenby, T. R. . . .	Bright . . . . .	R. 3
Bond, Marc L. . . .	Aurora . . . . .	R. D	Liddle, John R. . . .	Bright . . . . .	R. D
Bowers, A. J. . . . .	Moore's Hill . . .	R. D	Lord, Thomas J. . .	Dillsborough . . . .	E. D
Collins, Samuel H. .	Lawrenceburg . .	R. D	Miller, Chas. B. . .	Lawrenceburg . . .	R. D
CRAIG, T. E. . . . .	Lawrenceburg . .	R. 10	Owens, R. J. . . . .	Lawrenceburg . . .	R. D
Chamberlain, S. B. .	Moore's Hill . . .	R. 10	Rectanus, Frederick	Aurora . . . . .	R. D
Carey, Charles H. . .	Moore's Hill . . .	R. 3	Rosser, David . . . .	Moore's Hill . . . .	R. D
Curley, Josephus H. .	Moore's Hill . . .	R. D	Ratcliff, J. T. . . .	New Alsace . . . .	R. 3
Daughters, Andrew H.	Moore's Hill . . .	R. 10	Smith, Edwin . . . .	Aurora . . . . .	H. D
Fernier, Pierre . . .	Weisburgh. . . .	R. D	Sutton, H. H. . . .	Aurora . . . . .	R. D
Freeland, J. L. . . .	Manchester . . . .	R. D	Sale, F. H. . . . .	Dillsborough . . . .	R. D
Gatch, James D. . . .	Lawrenceburg . .	R. D	Sale, J. H. . . . .	Dillsborough . . . .	R. D
Henry, W. C. . . . .	Aurora . . . . .	R. D	Swales, Wilson H., Sr	Logan . . . . .	R. D
Heaton, Conley . . .	Moore's Hill . . .	R. D	Swales, Wilson H., Jr	Logan . . . . .	R. D
Haines, Abraham B. .	Aurora . . . . .	R. 0	Terrill, Wm. M. . . .	Lawrenceburg . . .	R. D
Hayward, Milton P. .	Lawrenceburg . .	H. D	Vincent, Henry C. . .	Guilford . . . . .	R. D
House, John H. . . .	Manchester . . . .	R. D	Weaver, Samuel M. .	Dillsborough . . . .	E. D
Kyle, Thomas M. . . .	Aurora . . . . .	R. D	Walter, Carl G. . . .	Lawrenceburg . . .	R. 10

Regular, 35; Eclectic, 2; Homeopathic, 2; not reported, 1.

*Decatur County.*

Alexander, Jno. H. . .	Clifty . . . . .	R. D	Howard, F. M. . . .	St. Paul . . . . .	R. D
Billard, D. J. . . . .	St. Paul . . . . .	R. D	Johnson, Thos. . . .	Greensburg . . . .	R. D
Beal, C. M. . . . .	Clarksburg . . .	R. D	Maguire, S. M. . . .	Greensburg . . . .	H. 10
Bidinger, L. W. . . .	Waynesburg. . .	R. 10	Miller, E. E. . . . .	Westport . . . . .	H. D
Bobbitt, Jno. H. . . .	Greensburg . . .	R. D	Parker, J. W. . . . .	Adams . . . . .	R. 10
BRACKEN, WM. . . .	Greensburg . . .	R. D	Painter, Berry . . .	Adams . . . . .	P. M. D
Bracken, J. B. . . .	Greensburg . . .	R. 10	Pennington, Eli . . .	New Pennington . .	R. 10
Bunker, L. C. . . . .	Greensburg . . .	E. 10	Reamy, A. S. . . . .	Greensburg . . . .	R. D
Burroughs, J. P. . . .	Westport . . . .	R. 10	Riley, J. H. S. . . .	Sardinia . . . . .	R. D
Butler, Wm. G. . . .	Adams . . . . .	H. 10	Riley, Wm. F. . . .	Sardina . . . . .	R. D
Cain, Cornelius . . .	Clarksburg . . .	R. 10	Ruby, G. Passfield .	Greensburg . . . .	H. D
Clark, Geo. E. . . . .	Waynesburg . . .	R. D	Schofield, J. V. . . .	Harris City . . . .	R. D
Clark, Thos. C. . . .	Lett's Corner . . .	E. D	Scobey, D. L. . . . .	Greensburg . . . .	R. D
Covert, C. H. . . . .	Greensburg . . .	R. D	Smith, Jno. L. . . .	Clarksburg . . . .	R. D
Crawford, Geo. . . .	Clifty . . . . .	R. D	Swem, E. B. . . . .	Greensburg . . . .	R. 10
Daily, T. M. . . . .	Milhouses . . . .	R. 10	Shields, Jas. S. . . .	Greensburg . . . .	R. D
Depew, Richard . . .	St. Paul . . . . .	R. D	Thomas, R. M. . . . .	Greensburg . . . .	R. D
Falconburg, M. G. . .	Greensburg . . .	E. 10	Vest, M. C. . . . .	Greensburg . . . .	R. D
Godfrey, Geo. W. . .	Forest Hill . . . .	R. 3	Webb, W. H. . . . .	Greensburg . . . .	R. 10
Hause, Wm. . . . .	Westport . . . .	E. D	White, B. S. . . . .	Lett's Corner . . . .	R. D
Hitt, J. Y. . . . .	Greensburg . . .	R. D	Wooden, Wm. H. . .	Greensburg . . . .	R. D
Hitt, S. B. . . . .	Greensburg . . .	R. 3	Wright, S. V. . . . .	Greensburg . . . .	R. D

Regular, 33; Eclectic, 4; Homeopathic, 4; Physio-Medical, 1.

*Dekalb County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Allen, Wm. S.	Auburn	R. 10	Kenestric, Joseph D.	Butler	R. D
Barne t, Jos S.	Butler	R. D	Kester, Alonzo A.	Garrett	H. 3
Bennett, Jos. B.	Butler	R. D	Lawrence, James M.	Newville	R. 3
Bevier, William	Waterloo	E. D	Lewis, James V.	Auburn	R. D
Bolan, Milton J.	Butler	R. 10	Matheny, Timothy G.	Auburn	R. D
Bowman, Hiram W.	St. Joe	R. D	Mercer, Wm. M.	Corunna	R. D
Brunson, Vincent E.	Newville	R. D	Miller, Jonathan	Butler	R. 10
Carpender, Wm. P.	Butler	R. D	Nusbaum, Wm. H.	Corruna	R. D
Casebeer, Jacob B.	Auburn	R. D	Raub, Ephraim D.	Auburn	R. 3
Chamberlain, Jas. N.	Waterloo	R. D	Rudolph, Oswald F.	Fairfield Center	R. D
Cisail, B. G.	Corunna	R. 10	Sargent, Theo. C.	Garrett	R. D
Darby, A. B.	Waterloo	R. D	Sebring, David A.	Auburn	R. 10
Dunn, Jacob T.	Garrett	R. 3	Sheffer, Barton S.	Blair	R. D
Emanuel, Jonas	Spencerville	R. D	Shepherd, Z. W.	Waterloo	H. D
Fanning, Fred W.	Butler	R. D	Snyder, Fairfield	Corunna	R. D
Farrington, A. S.	Waterloo	R. 10	Stewart, Thomas H.	Garrett	E. D
Fitzpatrick, Job D.	Newville	R. 10	SWARTZ, DAVID J.	Auburn	R. D
Ford, Joseph H.	Auburn	R. 10	Swartz, Vesta M. W.	Auburn	R. D
Greenewald, Marquis	Auburn Junction	R. 10	Thompson, John F.	Garrett	R. D
Hughes, James W.	Waterloo	R. 10	Warden, V. H.	Fairfield Center	R. D
Hull, Henry H.	Newville	R. 10	Wood, Fred B.	Garrett	R. D
Hull, Jacob	Spencerville	E. D	Walser, John A.	Newville	E. 3

Regular, 37; Eclectic, 5; Homeopathic, 2.

*Delaware County.*

Ames, George F.	Eaton	R. D	Munsey, David O.	New Corner	R. D
Armitage, David R.	Muncie	R. D	McCrillis, Charles	Muncie	R. 3
BRADBURY, A. B.	Muncie	R. D	McKinney, David R.	Yorktown	R. D
Bowles, Thomas J.	Muncie	R. D	Orr, David	Yorktown	E. 10
Bunch, Robert A.	De Soto	E. D	Phinney, Arthur J.	Muncie	H. D
Baird, John V.	Albany	E. 3	Puckett, Elisha J.	Muncie	R. D
Boyden, Wilber J.	Muncie	R. D	Payton, Lewis	Muncie	P. M. D
Comstock, John S. D.	Cowan	R. 10	Quick, John C.	Harrison	P. M. D
Clemens, William D.	New Corner	R. 10	Riggs, Charles E.	Yorktown	N. R. 10
Cornelius, William W.	Daleville	E. 10	Reasoner, Omer I.	Shideler	R. D
Cotterell, David W.	Muncie	R. 10	Rogers, William R.	Shideler	R. 10
Downing, Jonathan R.	Yorktown	R. D	Ricks, M. W.	Muncie	P. M. D
Day, B. F.	Harrison	R. D	Ross, John C.	Muncie	E. 10
Driscott, William E.	Cowan	R. D	Shideler, Joseph K.	Muncie	N. R. 10
Eastes, William T.	Wheeling	R. D	Summers, Henry C.	Daleville	R. 3
Green, George R.	Muncie	R. D	Shepherdson, N.	Muncie	E. D
Good, Alonzo H.	Selma	R. 10	Spurgeon, Wm. A.	Muncie	P. M. D
Ginn, James F.	Granville	P. M. D	Shields, Edgar A.	Muncie	R. D
Hayden, John H.	Harrison	P. M. D	Shaub, Daniel	Muncie	N. R. D
Jump, Samuel V.	New Burlington	R. D	Snell, S. R.	Muncie	E. 10
James, Milton	Muncie	R. D	Snodgrass, B. D.	Cammack	P. M. D
Kemper, G. W. H.	Muncie	R. D	Smith, Charles W.	Muncie	R. D
Martin, John S.	Muncie	H. D	Skiff, Clark	Selma	R. 10
Martin, Simeon	Daleville	R. D	Shively, David M.	Yorktown	P. M. 10
Mitchell, Harvey	Muncie	R. 10	Trobridge, David L.	Muncie	R. 10
Murray, Alfred L.	Eaton	R. 10	Tuttle, John R.	Wheeling	R. 3
Murray, Albert P.	Albany	R. D	Winans, Henry M.	Muncie	R. D
Marshall, Reuben	Cowan	R. D			

Regular, 35; Eclectic, 7; Physio-Medical, 8; Homeopathic, 2; not reported, 3.

*Dubois County.*

Clifford, Jasper	Holland	E. D	Parr, G. L.	Ireland	R. D
Coble, P. L.	Knoxville	R. 3	Rust, John F.	Holland	R. 10
Faulkner, Joseph F.	Birdseye	N. R. 10	Rust, W. F.	Holland	R. 10
Glezen, E. A.	Ireland	R. 10	Salb, John P.	Jasper	R. D
Gray, O. B.	Schnellville	N. R. 10	Sabin, A. L.	Jasper	E. D
Gobble, Frederick	Birdseye	R. D	Schellha, Paul W. V.	Huntingburg	E. D
Hermann, W. H.	Schnellville	H. D	Schreifer, John H.	St. Anthony	R. 3
Hunter, Walter M.	Portersville	R. 3	Schwartz, C. W.	Huntingburg	R. D
Isham, John H.	Birdseye	R. D	Smith, James H.	Birdseye	R. D
Johnson, Jno. R.	Celestine	E. 3	Stephenson, Edward	Jasper	R. 10
KEMPF, E. J.	Jasper	R. D	Veneman, R. T.	Ferdinand	R. 10
Kempf, Paul H.	Ferdinand	R. D	Wertz, Toliver	Jasper	R. D
Lukemeyer, E. G.	Huntingburg	R. D	Williams, J. A.	Altoga	R. D
Line, W. A.	Hillham	N. R. 10	Williams, G. P.	Huntingburg	R. 10
Montgomery, G. B.	Huntingburg	R. D	Walderip, H. L.	Ludlow	N. R. 10
McMahan, W. R.	Huntingburg	R. D	Walker, George W.	Ellsworth	N. R. 10
McCown, C. C.	Ireland	R. D	Woelker, Chas.	Huntingburg	N. R. 10
Newland, Chas. W.	Hillham	R. D			

Regular, 24; Eclectic, 4; Homeopathic, 1; not reported, 6.

*Elkhart County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Aitkins, F. M.	Bristol	R. D	Johnson, W. W.	Goshen	R. D
Aldrich, Chas. J.	Middlebury	R. D	Knepple, W. H.	Wakarusa	R. 3
Baker, David W.	Benton	R. 3	Krider, M. K.	Goshen	H. D
Barbour, J. E.	Bristol	H. D	Krider, W. B.	Goshen	H. D
Bower, C. C.	Bristol	R. D	Lambert, C. A.	Goshen	R. D
Bowman, Wm. E.	Elkhart	R. D	Latta, M. M.	Goshen	R. U
Bowser, John M.	Nappanee	R. D	Larimer, B.	Millersburg	R. D
Cassell, Elizabeth	Elkhart	R. D	Martin, S. E.	Vistula	R. 10
Clark, S. T.	Elkhart	R. D	Mathews, Jas.	New Paris	R. D
Coover, Wm. H.	Goshen	N. R. 10	Miles, F. L.	Elkhart	R. D
Crum, P. W.	Middlebury	R. 10	Miller, D. L.	Goshen	R. D
Crockett, J. A.	Elkhart	N. R. 10	Montgomery, Tho	Elkhart	10
Day, Luella	Goshen	R. D	Mumaw, H. A.	Nappanee	H. D
Dreese, Chas. L.	Goshen	R. D	Myers, J. W.	Middlebury	E. D
Eckleman, F. C.	Elkhart	R. D	Neal, W. A.	Elkhart	R. 3
Eisenbeiss, Sam'l	New Paris	R. D	Niman, Chas. W.	Elkhart	R. D
Fisher, A. S.	Elkhart	H. D	Pixley, C. S.	Elkhart	R. D
Funk, Sophia A.	Elkhart	H. D	Putt, F. L.	Middlebury	R. D
Frink, C. S.	Elkhart	R. D	Richards, Isaac.	Waterford Mills.	R. 10
Greiner, Geo. G.	Vistula	R. 3	Schrock, C. H.	Nappanee	R. 10
Haggerty, R. Q.	Elkhart	R. D	Sensenich, A. S.	Wakarusa	R. D
Hani, W. F.	Middlebury	R. D	Shepherd, Thomas	New Paris	E. D
Harding, P. D.	Goshen	R. D	Sweetland, Frank	Elkhart	R. D
Harrington, O. W.	Elkhart	R. D	Sparklin, C. C.	Goshen	R. 10
Hatch, O. W.	Elkhart	N. R. 3	Stauffer, W. O.	Nappanee	R. D
Heatwole, Henry.	Goshen	E. 10	Stauffer, H. R.	Nappanee	R. D
HEATWOLE, JOS. H.	Goshen	R. D	Thomms, W. H.	Elkhart	H. D
Hendrix, T. C.	Elkhart	R. D	Turner, Porter	Elkhart	R. 3
Herring, Fred'k	Goshen	E. 10	Wert, P. L.	Waterford Mills.	R. 10
Horton, John.	Elkhart	E. D	Whippy, W. A.	Goshen	H. D
Inks, John	Wakarusa	R. D	Whitmer, B. F.	Goshen	R. D
Irwin, A. J.	Goshen	R. D	Wickham, W. W.	Goshen	E. D
Jackson, A. C.	Goshen	R. 10	Woodcox, M. C.	Millersburg	E. D
Jennings, J. W.	Millersburg	R. D	Work, J. A.	Elkhart	R. D

Regular, 49; Homeopathic, 8; Eclectic, 7; not reported, 3.

*Fayette County.*

Butler, D. W.	Connorsville	R. 10	Phares, O. P.	Alquina	R. D
Chitwood, Geo. R.	Connorsville	R. D	Pepper, Wm. J.	Connorsville	R. D
Chitwood, Joshua	Connorsville	R. D	Shepard, L. D.	Everton	R. 10
Chitwood, John E.	Connorsville	R. D	Sipe, R. W.	Fayetteville	R. D
Chitwood, Frank	Connorsville	R. 10	Smolley, John G.	Connorsville	R. D
Derbyshire, Ephraim	Bentonville	R. D	Tingley, U. B.	Harrisburg	R. 10
Derbyshire, A. L.	Connorsville	R. D	Turner, John	Null's Mills	E. 10
DILLMAN, L. D.	Connorsville	R. D	Vance, S. W.	Connorsville	R. D
Gregg, V. H.	Connorsville	R. 10	Wall, John	Connorsville	R. 10
Hamilton, S. N.	Connorsville	R. D	Webster, Elias	Connorsville	H. D
Larimore, J. D.	Connorsville	R. D	Wyman, Charles	Lyon's Station	R. D
Morgan, P. B.	Connorsville	H. D	Wyman, Charles P.	Everton	R. D

Regular, 21; Homeopathic, 2; Eclectic, 1.

*Floyd County.*

Alexander, S. J.	New Albany	R. D	Lemon, J. H.	New Albany	R. 10
Bowman, Chas.	New Albany	R. D	Levi, L. D.	Georgetown	R. D
Brigham, R. S.	New Albany	H. D	McIntyre, C. W.	New Albany	R. D
Burney, W. A.	New Albany	R. D	Neat, Andrew	New Albany	R. D
Beust, Max	New Albany	R. D	Neat, L. C.	New Albany	R. 10
Beust, Bernhard	New Albany	R. D	Needham, H. J.	New Albany	H. D
Brockington, Chas. N.	New Albany	H. D	Rutherford, R. S.	Galena	R. D
Cook, Chas. P.	New Albany	R. D	Sloan, John	New Albany	R. D
Cannon, G. H.	New Albany	R. D	Stewart, J. L.	New Albany	R. D
Clapp, W. A.	New Albany	R. D	Sigmon, E. L.	New Albany	R. D
Cole, J. A.	Georgetown	R. D	Starr, W. L.	New Albany	R. D
Davis, J. M.	Greenville	R. D	Scribner, E. B.	New Albany	R. D
Davis, C. P.	Galena	R. D	Sinex, W. G.	New Albany	R. D
EASLEY, E. P.	New Albany	R. D	Tucker, W. W.	Georgetown	R. 10
Erni, G. O.	New Albany	H. D	Taggart, W. J.	Galena	R. D
Kay, Robert	Greenville	R. D	Wilcox, S. C.	New Albany	R. D
Knoeful, August	New Albany	R. 10	Williams, W. R.	Greenville	R. D
Knoeful, R. C.	New Albany	R. D	Wolfe, H. S.	New Albany	R. D

Regular, 32; Homeopathic, 4.

*Fountain County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Armstrong, Lewis P.	Newton . . .	R. D	McClelland, A. J.	Veedersburg . N.	R. 10
Austin, Charles B.	Veedersburg .	R. 10	McNeill, Scott .	Stone Bluff . .	R. 3
Birch, Edward L.	Covington . .	R. D	Petit, Marshall .	Veedersburg .	R. D
Burlington, James C.	Attica . . . .	E. D	Quinn, James W.	Hillsboro . . .	R. 10
Case, Marvin T.	Attica . . . .	R. D	Rice, John T.	Attica . . . .	R. D
Coggins, Chas. M.	Snoddy's Mills .	R. D	Richardson, A. G.	Veedersburg .	R. D
Cole, Wm. C.	Attica . . . .	R. D	Riffe, John S.	Newton . . . .	R. D
Cooper, Silas C.	Fountain . . .	N. R. 10	Rowland, George .	Covington . .	R. D
Dowden, Jas. W.	Yeddo . . . .	N. R. 10	Rupert, Archie M.	Attica . . . .	R. D
Fine, Ephraim M.	Steam Corner .	R. D	Shoaf, F. A. . .	Yeddo . . . .	R. D
Finney, Chas. J.	Attica . . . .	R. D	Shotts, Henry R.	Wallace . . . .	R. D
Gooden, Goldsmith	Veedersburg .	R. D	Sparks, J. T. . .	Yeddo . . . .	N. R. 10
Hays, George C.	Hillsboro . .	R. D	Spining, John N.	Covington . .	R. 10
Hawk, J. W.	Covington . .	R. 10	Stout, Wm. R.	Hillsboro . .	R. D
JONES, GEORGE S.	Covington . .	R. D	Vandervolgen, W. M.	Newtown . . .	R. D
Lyons, Lewis D.	Attica . . . .	R. D	Whitehall, Sam'l P.	Attica . . . .	E. D
Livengood, Jasper A.	Wallace . . .	R. D	Wilson, Wm. L.	Attica . . . .	R. D
Mock, John W.	Covington . .	R. D	Young, F. B. . .	Veedersburg .	R. D
Moore, Patrick B.	Harveysburg .	R. D			

Regular, 31; Eclectic, 2; not reported, 4.

*Franklin County.*

Annis, W. B. . . .	Bath . . . .	E. 3	Linegor, Daniel B.	Whitcomb . . .	E. 10
Averdick, H. G. .	Oldenburg . .	R. D	Mann, E. B. . . .	Oldenburg . .	R. D
Berry, Geo. . . .	Brookville . .	R. 10	Morgan, I. O. . .	Springfield .	R. D
Berry, W. H. . .	Brookville . .	R. D	Maguire, Wm. W.	Metamora . . .	R. 10
Bertinshaw, Thos. F.	Drewersburg .	R. 3	McClain, Jno. F.	Laurel . . . .	— D
BUCKINGHAM, G. B.	Brookville . .	R. D	Owens, E. I. . . .	Cedar Grove .	R. D
Black, Frank B.	Cedar Grove .	E. D	Patten, E. L. . .	Fairfield . . .	R. D
Cupp, M. F. . . .	Metamora . .	R. D	Quick, Jno. H. .	Brookville . .	R. 10
Conner, Thos. H.	Metamora . .	R. —	Rayburn, I. W. .	Andersonville .	— D
Davis, Wm. H. . .	Mt. Carmel . .	R. 10	Squires, G. E. . .	Brookville . .	E. D
Ford, Thomas . .	Laurel . . . .	R. D	Shunn, Chas. . .	St. Peters . . .	R. 10
Grahn, Edward G.	New Trenton .	R. D	Seales, Frank . .	Whitcomb . .	E. D
Gifford, S. A. . .	Laurel . . . .	R. D	Spillman, Frank .	Andersonville .	R. D
Gregory, Henry .	Laurel . . . .	R. 10	Stoddard, S. P. .	Brookville . .	E. D
Hendrick, Jas. L.	Fairfield . . .	R. 3	Simmons, E. . . .	Blooming Grove.	E. 3
Jenkins, E. W. . .	Mt. Carmel . .	E. D			

Regular, 22; Eclectic, 8; not reported, 2.

*Fulton County.*

Bailey, Allen L. .	Akron . . . .	R. D	Howell, J. S. . . .	Kewanna . . . .	R. 10
Brown, Angus . .	Rochester . .	H. 10	Johnston, Aaron .	Akron . . . .	R. 10
Calvin, Geo. M. .	Kewanna . . .	E. D	Loring, C. J. . . .	Rochester . .	R. D
Campbell, L. M. .	Blue Grass . .	R. 10	Morris, J. M. . . .	Fulton . . . .	R. 10
Caple, A. Z. . . .	Akron . . . .	R. D	Overmyer, B. F. .	Leiter's Ford .	R. D
Case, A. . . . .	Akron . . . .	R. 10	Peters, Jno. B. . .	Fulton . . . .	R. 10
Clymer, L. J. . .	Bloomingsburg .	E. D	Rannels, J. N. . .	Rochester . .	E. D
Dawson, B. F. . .	Rochester . .	R. D	Rhodes, E. E. . .	Bigfoot . . . .	R. D
Doke, J. T. . . .	Tiosa . . . .	R. 10	Robbins, A. H. . .	Rochester . .	R. D
Eikenburger, S. .	Tiosa . . . .	R. D	Shafer, Winfield S.	Rochester . .	E. D
Fish, S. R. . . .	Bloomingsburg .	E. 10	SHIELDS, A. M. .	Rochester . .	R. D
Gootstadd, — . .	Rochester . .	R. D	Smith, John W. . .	Rochester . .	R. D
Gould, Chas. . .	Rochester . .	R. D	Spohn, Jacob C. .	Rochester . .	R. D
Gould, Vernon . .	Rochester . .	R. D	Thompson, A. R. .	Kewanna . . .	R. 10
Harter, C. F. . .	Akron . . . .	R. D	Viney, D. W. . . .	Rochester . .	R. D
Hector, Cornelius .	Rochester . .	E. D	Wait, O. P. . . .	Rochester . .	R. D
Hector, F. M. . .	Rochester . .	E. D	West, J. H. . . .	Rochester . .	R. D
Hill, Wm. . . . .	Rochester . .	E. D			

Regular, 24; Eclectic, 8; Homeopathic, 1.

*Gibson County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Ballard, S. H.	Haubstadt	R. D	McGowan, W. I.	Oakland City	R. 10
Blair, W. W.	Princeton	R. D	Montgomery, T. J.	Owensville	R. D
Blair, Franklin	Princeton	R. D	Moore, Robt.	Somerville	R. D
Bliss, Geo. I.	Princeton	N. R. 10	Munford, S. E.	Princeton	R. D
Bosinger, F. W.		R. D	Nelson, Frank	Hazelton	R. 10
Brown, Thos. M.	Oakland City	R. 10	Ottman, Peter	Haubstadt	R. D
Burton, A. R.	Princeton	R. D	Patten, J. C.	Francisco	R. D
Burton, Hiram	Somerville	R. 10	Pcwell, D. G.	Princeton	R. D
Curtner, P. H.	Hazelton	R. D	Reavis, D. P.	Francisco	R. 3
Duncan, W. B.	Patoka	N. R. 3	Richie, L. B.		N. R. 10
Eston, Jno. M.	Ft. Branch	E. 3	Runcie, J. W.	Ft. Branch	R. D
Fisher, Geo. C.	Patoka	R. D	Runcie, Geo. W.	Ft. Branch	R. D
Gudgel, Jno. F.	Hazelton	R. D	Scrickland, Geo.	Francisco	R. D
Hopkins, Jos. N.	Ft. Branch	R. D	Stott, John	Princeton	R. D
Hudson, O. L.	Princeton	H. 10	Shoemaker, D. M.	Owensville	E. D
Ireland, Jno. M.	Francisco	R. D	Shelton, J. W.	Somerville	R. 10
Kidd, W. G.	Princeton	R. D	Shoptaugh, S. H.	Princeton	R. D
KENDALL, G. C.	Princeton	R. D	Stewart, W. H.	Oakland City	R. 10
Lehman, Jno. L.	Patoka	E. 3	Thomas, Geo. A.	Haubstadt	R. D
Lester, W. L.	Oakland City	E. D	West, V. T.	Princeton	R. 10
Littlepage, Geo.	Warrenton	R. D	Wilde, Chas. A.		N. R. 10
Marchant, Victor	Haubstadt	R. D	Williams, Jno. M.	Owensville	R. D
Mason, Geo. C.	Oakland City	R. D	Williamson, W. T.	Ft. Branch	E. D
Maxam, F. H.	Princeton	R. D	Woodruff, A. C.	Somerville	R. D
McLone, Jno. A.	Princeton	R. 10	Vellmer, Joseph		R. D
McGowan, J. W.	Oakland City	R. D			

Regular, 40; Eclectic, 6; Homeopathic, 1; not reported, 4.

*Grant County.*

Adkins, Jno. C.	Marion	R. 3	Kimball, T. C.	Marion	R. D
Ardery, Oscar	N'w Cumberland	R. D	Landess, G. A.	Landessville	R. 3
Barnes, E. V.	Marion	P.-M. 10	Langston, Edgar	Point Isabel	N. R. 10
Barnes, R. A.	Marion	P.-M. D	Lennox, Frank	Swayzee	R. 10
Barnes, W. C.	Mier	R. D	Lord, J. L.	Point Isabel	R. D
Carey, Isaac	Marion	P.-M. D	Lytle, Jno. B.	Marion	R. D
Cook, F. S.	Herbst	P.-M. D	Ludlum, B. F.	Marion	R. 10
Corey, Lavaner.	Van Buren	R. D	Lomax, Wm	Marion	R. D
Corey, L. J.	Van Buren	R. D	Manring, N. H.	Rigdon	R. D
Conover, J. V.	Jalapa	E. 10	Meek, Jno. A.	Jonesboro	R. 10
Conwell, L. V.	Van Buren	R. 10	Morris, Geo. P.	Jadden	P.-M. D
Caldren, W. R.	Marion	P.-M. D	Moore, Stephen W.		E. D
Davis, S. H.	Sweetzer	E. 10	Munsey, J. S.		R. D
Daniels, G. W.	Marion	R. D	Moon, Allen	Fairmont	P.-M. 3
Eberle, Peter	Marion	N. R. 3	McKinney, Geo. W.	Jonesboro	E. 10
Forrest, Jno. H.	Marion	E. 10	Moore, Chas. V.	Fairmont	R. 3
Follis, Amos L.	Fairmont	P.-M. D	Nuzum, D. P.	Rigdon	E. D
Flynn, William	Marion	R. D	Puckett, Thos. J.	Arcane	P.-M. 10
Haines, N. P.	Roesburg	R. 3	Seal, Isaac N.	Hackleman	R. 10
HAMILTON, A. A.	Marion	R. 3	Shiveley, Jas. S.	Marion	R. D
Henley, Alpheus	Fairmont	R. D	Shiveley, Marshall T.	Marion	R. D
Hess, Luther P.		R. D	Snodgrass, D. B.	Marion	P.-M. D
Horn, S. S.	Jonesboro	R. D	Stout, O. L.	Upland	R. D
Hough, W. A.	Marion	P.-M. 3	Stephens, A. B.	Marion	P.-M. 3
How, L. E.	Marion	P.-M. 3	Swisher, F. M.		P.-M. D
Hollis, Samuel	Upland	R. D	Snodgrass, Mary	Marion	P.-M. 3
Hanmore, J. J.	Hanfield	R. 3	Small, N. W.	Jonesboro	E. D
Hubbard, W. H.	Fairmont	R. 3	Ware, C. M.		R. D
Innis, Robert E.		N. R. 3	Ward, Jas. B.		R. D
Jackson, L. M.	Marion	R. 10	Wall, M. M.	Marion	H. D
Jones, C. A.	Jonesboro	E. D	Williams, Lewis	Marion	R. 3
Jones, E. P.	Marion	E. 10	Whitson, Eli M.	Jonesboro	R. D
Knight, Jno. C.	Jonesboro	R. D	Williamson, P. E.	Sweetzer	R. D
Kelsey, J. S.		R. 3	Whorton, Wm. L.	N'w Cumberland	R. D
Knapp, Albert R.		P.-M. D	Volow, R. A.	Marion	P.-M. 3

Regular, 40; Physio-Medical, 16; Eclectic, 6; Homeopathic, 2; not reported, 3.

*Greene County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Acton, Wm. G.	Elvan	E. 10	Laughlin, Chas. E.	Owensburg	R. D
Arnold, J. G.	Lyons	R. 10	Livingston, John J.	Worthington	R. D
Asbury, W. H. H.	Jasonville	R. D	Lowder, H. R.	Bloomfield	R. D
Aydelotte, Thos.	Worthington	R. 3	Marshall, Alf. F.		10
Burge, N. C.	Parke	R. 10	McDowell, W. H.		10
Burke, W. H.	Scotland.	R. D	McCabe, Henry H.	Worthington	E. D
Clary, H. T.	Worthington	E. D	Mullinix, L. P.	Worthington	R. D
Cook, Peter M.	Solsberry	R. D	Mullane, Joseph.	Lyons	R. D
Connell, Sam'l A.	Rockwood	E. 10	Newman, Wm. R.	Worthington	10
Cravens, Sam'l C.	Bloomfield.	R. D	Purdy, John		R. D
Derment, Chas. R.	Newberry	R. D	Rankin, Thos. B.	Bloomfield.	R. D
Dilley, Leroy H.	Linton.	E. 10	Reeves, Abraham	Worthington	R. D
Dixon, Mary A.	Dixon	10	Roberts, Edward S.	Worthington	E. 10
Ellis, Ira	Marco	R. D	Roberts, Edward J.	Worthington	E. 10
Edwards, Chas. H.	Lyons	R. D	Rose, B. A.	Linton.	R. D
Gilbert, Wm. H.	Farmers' Station	R. 10	Selfridge, W. R.	Worthington	R. D
Gray, Simeon.	Worthington	R. 10	SHERWOOD, E. T.		R. D
Gray, Geo. B.	Worthington	R. D	Spaulding, Geo. L.	Sanburn	R. D
Harrah, John M.	Switz City.	R. D	Sims, J. A.	Newberry	R. D
Harold, H.	Owensburg	E. 10	Stone, J. A.	Hobbierville	R. 10
Hannan, Jno. W.	Scotland.	R. D	Squires, Wm. B.	Worthington	E. D
Hanna, Jesse	Linton.	R. 10	Talbot, Jas. E.	Marco	R. D
Hilburn, E. W.	Newberry	R. D	Thomas, Wm. D.		R. D
Hixon, Wm. H.	Newark	10	Wheeler, Thos.	Newark	R. D
Jackson, E. J.	Linton.	R. 10	Williams, Noah W.	Owensburg	R. 10
Kent, Marinda C.		10	Wilson, Wm. L.	Switz City.	R. D
Kessinger, W. E.		R. D	Yenne, Chas. H.	Owensburg	D
Kutch, Jno	Bloomfield	R. D	Young, Chas. C.	Koleen.	R. D
Lamreaux, S. T.	Worthington	E. 10			

Regular, 40; Eclectic, 10; not reported, 7.

*Hamilton County.*

Austin, E. P.	Noblesville	E. 10	Lyle, Arthur W. T.	Fisher's Switch	R. D
Applegate, A. J.	Eagletown	R. D	Loehr, E. C.	Noblesville	R. D
BOOTH, A. D.	Noblesville	R. D	Loder, C. C.	Hortonville	H. D
Benson, J. L.	Noblesville	R. D	Murphy, J. M.	Arcadia	R. D
Barber, John M.	Arcadia	R. 10	Mercer, John T.	Arcadia	R. D
Byers, J. S.	Noblesville.	P. M. D	Miesse, A.	Noblesville	R. D
Baker, J. J.	Westfield.	P. M. D	Millikan, H. W.	Sheridan	P. M. D
Cook, C. W.	Carmel	P. M. D	McMurtry, T. J.	Boxley.	R. D
Coffin, B. F.	Westfield.	P. M. 10	McShane, T. J.	Carmel	R. D
Carney, F. W.	Sheridan	R. D	Moore, Geo. B.	Omega.	R. 10
Davenport, J. W.	Saeridan	R. D	Mendenhall, Chas. W.	Carmel	R. D
Davenport, H. E.	Sheridan	R. D	Malotte, Wm.	Arcadia	R. D
Dove, S. C.	Westfield	R. D	Newby, John C.	Boxley	R. D
Driver, J. C.	Atlanta	R. D	Pettijohn, J. B.	Westfield	R. D
Eskew, H. T.	Eagletown.	R. D	Pettijohn, O. B.	Denning	R. D
Fancher, J. W.	Sheridan	R. D	Parr, J. N.	Jolietville.	R. D
Graham, W. B.	Noblesville	R. D	Rhodes, Mrs. Anna.	Atlanta	R. D
Griffin, R. I.	Deming	R. 3	Smith, H. B.	Olio	R. D
Gray, J. M.	Noblesville	R. D	Smith, T. J.	Strawtown	R. D
Houser, J. A.	Arcadia	R. D	Starzman, Lewis.	Arcadia.	R. 10
Haworth, M. C.	Noblesville	R. D	Stout, H. H.	Cicero	R. D
Hobson, Mrs. J. F.	Noblesville	E. D	Tucker, A. R.	Cicero	R. D
Herr, H. S.	Westfield	R. D	White, T. A.	Noblesville	R. D
Harrold, N. G.	Carmel	R. D	Whitesell, P. P.	Clarksville	R. 10
Heath, J. P.	Fisher's Switch	R. D	Worman, A. J.	Arcadia	R. D
Hershey, K. C.	Carmel	R. D	Warford, F. M.	Cicero	R. D
Kitchell, J. S.	Noblesville	E. 10	Willson, W. L.	Baker's Corner	E. D

Regular, 45; Eclectic, 3; Physio-Medical, 5; Homeopathic, 2.

*Hancock County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Adams, M. M . . .	Greenfield . . .	R. D	Justice, J. M . . .	Maxwell . . .	R. D
BOOTS, S. S . . .	Greenfield . . .	E. D	Justice, W. A . . .	Eden . . .	R. D
Buchel, Jacob . . .	Sugar Creek . . .	N. R. 10	King, W. R . . .	Philadelphia . . .	R. 3
Brown, C. S . . .	Fortville . . .	R. 3	Kirkhoff, . . .		
Bruner, Chas. K . . .	Westland . . .	R. D	Larimore, J. M . . .	Carrollton . . .	R. D
Coffin, O. S . . .	Greenfield . . .	E. D	Louden, John . . .	Carrollton . . .	E. D
Carter, L. A . . .	Charlottesville . . .	R. D	Martin, S. M . . .	Greenfield . . .	R. D
Cox, Wm. B . . .	Charlottesville . . .	E. 3	Pratt, C. C . . .	Millner's Corner . . .	R. D
Collins, O. A . . .	Mohawk . . .	R. D	Ryan, W. B . . .	Willow Branch . . .	R. 3
Cook, Benj. M . . .	Wilkinson . . .	R. D	Stuart, A. A . . .	Fortville . . .	R. 3
Ely, Jas. M . . .	Sugar Creek . . .	R. D	Stuart, J. G . . .	Fortville . . .	R. D
Ely, Lucien C . . .	Sugar Creek . . .	R. D	Saunders, T. R . . .	Fortville . . .	10
Howard, N. P., Jr . . .	Greenfield . . .	R. D	Trump, J. F . . .	Greenfield . . .	R. D
Howard, N. P . . .	Greenfield . . .	R. D	Trees, Wm . . .	Warrington . . .	R. 10
Hervey, F. F . . .	Fortville . . .	R. D	Troy, Samuel A . . .	Millner's Corner . . .	R. D
Hanna, R. D . . .	Warrington . . .	R. D	True, Benj. F . . .	Mohawk . . .	R. 10
Hervey, T. P . . .	McCordsville . . .	R. 10	Trees, Jas. R . . .	Cleveland . . .	R. D
Judkins, E. I . . .	Greenfield . . .	R. D	Yancey, S. T . . .	Fortville . . .	R. D
Julian, J. P . . .	Wilkinson . . .	P. M. D			

Regular, 26; Eclectic, 5; Physio-Medical, 1; not reported, 4.

*Harrison County.*

Beannet, James H . . .	New Amsterdam . . .	R. D	LAWSON, JNO. E . . .	Corydon . . .	R. D
Curry, John C . . .	Mauckport . . .	R. 10	LaFollete, W. P . . .	New Salisbury . . .	R. D
Clark, Jacob C . . .	Corydon . . .	R. D	Martin, Geo. F . . .	Corydon . . .	R. D
Daniel, Wm . . .	Corydon . . .	K. D	Moore William . . .	Rosewood . . .	R. D
Davis, W. H . . .	New Middletown . . .	R. D	Mitchem, Lyttleton . . .	Crisp's Cross Rds . . .	R. 10
Derbo, W. R . . .	Crisp's Cross Rds . . .	R. 10	Neely, Isaac L . . .	Idlewild . . .	R. D
Dean, H. K . . .	Mauckport . . .	R. D	Reader, Wm . . .	New Amsterdam . . .	R. D
DeBrueler, O. E . . .	Valley City . . .	R. D	Reader, W. H . . .	Corydon . . .	R. D
Ellie, Jos . . .	Bradford . . .	R. 10	Smith, A. E. L . . .	Corydon . . .	R. D
Forbes, Burrell F . . .	Laconia . . .	R. D	Smith, S. A . . .	Laconia . . .	R. D
Funkhouser, W. H . . .	Corydon . . .	R. D	Smith, A. E . . .	Mauckport . . .	R. D
Funk, Z. T . . .	Elizabeth . . .	R. D	Seigler, R. R . . .	Ramsey . . .	R. D
Finley, J. F . . .	Palmyra . . .	R. 10	Wolfe, S. C . . .	Elizabeth . . .	R. D
Fouts, D. C . . .	New Salisbury . . .	R. 10	Wolfe, L. O. P . . .	Mauckport . . .	R. D
Hopp, I. I. F . . .	DePauw . . .	P. M. D	Wolfe, Z. C . . .	Lynessville . . .	R. D
Horner, Jacob S . . .	Lanesville . . .	R. 10	Wolpert, W. I . . .	Elizabeth . . .	R. D
Jones, A. M . . .	Corydon . . .	R. D	Winders, L. C . . .	New Middletown . . .	R. 10
Kandie, W. A . . .	Laconia . . .	R. 10	Zenor, J. W . . .	New Middletown . . .	R. 10

Regular, 35; Physio-Medical, 1.

*Hendricks County.*

Adams, Thomas J . . .	North Salem . . .	R. D	Hamlin, S. E . . .	Cartersburg . . .	R. D
Allen, John Q . . .	Plainfield . . .	R. D	Johnson, T. W . . .	Danville . . .	H. D
Bartholomew, B . . .	Danville . . .	R. D	Johnson, Oscar B . . .	Lizton . . .	R. D
Barker, Joel T . . .	Brownsburg . . .	R. D	Kennedy, L. H . . .	Danville . . .	R. D
Brill, James H . . .	Pittsboro . . .	R. D	Lawson, Wilson T . . .	Danville . . .	R. D
Broadhurst, John . . .	North Salem . . .	E. 10	Lewis, Robert . . .	Plainfield . . .	R. D
Brent, Newton . . .	Pittsboro . . .	R. D	Marsh, John L . . .	Brownsburg . . .	E. D
Brazier, Thomas F . . .	New Winchester . . .	R. 3	Masters, N. G . . .	Stilesville . . .	R. D
Brooks, M. W . . .	Hazlewood . . .	R. 3	Moore, Risdon C . . .	Belleville . . .	R. D
Burk, T. P . . .	Lizton . . .	R. 10	Morgan, Abraham . . .	Cartersburg . . .	E. D
Carter, Amos . . .	Plainfield . . .	R. D	Osborne, John A . . .	Stilesville . . .	R. D
Dryden, Thomas F . . .	Clayton . . .	R. D	Parker, M. G . . .	Danville . . .	R. D
Davidson, A. M . . .	Brownsburg . . .	R. D	Proctor, James . . .	North Salem . . .	R. D
Evans, Thomas . . .	Plainfield . . .	R. D	Robbins, William . . .	North Salem . . .	R. D
Farabee, Clark E . . .	Danville . . .	R. D	Ragan, John S . . .	Avon . . .	R. D
French, John S . . .	Pittsboro . . .	K. D	Reagan, Jesse . . .	Plainfield . . .	R. D
Greene, I. N . . .	Stilesville . . .	R. D	Summers, H. C . . .	Amo . . .	R. D
Grimes, Wm. F . . .	Coatesville . . .	R. D	Strong, J. T . . .	Plainfield . . .	R. D
Graham, Thomas A . . .	Brownsburg . . .	R. D	Snowdon, Jesse . . .	Maplewood . . .	R. D
Gilbert, A. K . . .	Clayton . . .	R. D	Strong, Asa M . . .	Belleville . . .	R. D
Hunt, Lightman . . .	Coatesville . . .	R. D	Snoddy, John M . . .	Stilesville . . .	R. D
Hunt, Stephen . . .	Coatesville . . .	R. D	Todd, Henry G . . .	Danville . . .	R. D
Huron, Frank H . . .	Danville . . .	H. D	Towles, Alfred N . . .	Danville . . .	R. D
House, George H. F . . .	Clayton . . .	R. D	WHITE, CHAS. A . . .	Danville . . .	R. D
Hoadley, Wm. J . . .	Danville . . .	R. D	White, Wm. H . . .	Amo . . .	R. D
Heavenridge, A . . .	Stilesville . . .	R. D			

Regular, 46; Eclectic, 3; Homeopathic, 2.



*Henry County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Anderson, John T.	Honey Creek	R. 3	Mendenhall, Elihu F.	Newcastle	R. D
BURKE, GEORGE W.	Newcastle	R. D	Mendenhall, Isaac	Newcastle	R. 10
Boor, Walter Axline	Newcastle	R. D	Moore, John W.	Newcastle	P. M. D
Barrett, Omar H.	Knightstown	R. D	Mansly, James	Newcastle	N. R. 10
Boor, William F.	Newcastle	R. D	McGavern, W. B.	Knightstown	R. D
Bartlett, Claude G.	Dunreith	R. D	McCray, Robert I.	Kennard	R. D
Bond, Caleb W.	Cadiz	R. 10	McKillop, James H.	Grant City	R. 10
Baily, George D.	Spiceland	R. D	McCormack, Wm. D.	Sulphur Sp'gs	P. M. D
Butterfield, W. Webster	Newcastle	R. D	Needham, John	Newcastle	P. M. D
Bartlett, A. C.	Lewisville	R. D	Norveil, R. D.	Mt. Summit	E. D
Baily, Rachel Stanton	Spiceland	R. D	Newby, Zimri	Greensborough	R. 10
Bartlett, Wm. M.	Lewisville	R. 10	Norris, Chas. E.	Newcastle	R. D
Benedict, Hanford	Springport	R. 3	Olden, Wilson C.	Woodville	R. 10
Crouse, Henry M.	Knightstown	R. D	Pendleton, C. B.	Mechanicsburg	P. M. D
Clopper, David	Mooreland	H. D	Pickering, Samuel	New Lisbon	R. D
Cochran, James	Spiceland	R. D	Rea, John	Newcastle	R. D
Deney, Rebecca J.	Knightstown	H. 10	Reasoner, W. M.	Sulphur Springs	R. D
Eskew, William C.	Kennard	R. D	Reed, William C.	Newcastle	P. M. 10
Estabrook, L. W.	Springport	R. D	Rawlins, F. J. C.	Elizabeth City	R. D
Ferris, Edgar S.	Newcastle	R. D	Rawlins, John W.	Elizabeth City	R. 3
Ferris, Samuel	Newcastle	R. 10	Ross, Jont	Bountsville	R. 10
Fuller, William	Knightstown	R. 10	Rea, Charles N.	Rogersville	R. D
Green, A. W.	Knightstown	R. D	Rutledge, Elijah D.	Sulphur Springs	E. 3
Gronendyke, Thos. W.	Newcastle	R. 3	Roadcop, Geo. W.	Middletown	H. D
Gronendyke, Oliver J.	Greensborough	R. D	Smith, Nelson G.	Lewisville	E. D
Garrett, Obid H.	Cadiz	R. D	Stafford, J. A.	Millville	P. M. D
Griffin, Robert	Middletown	R. D	Stafford, Daniel	Newcastle	P. M. D
Guyer, Oscar K.	Lewisville	R. D	Smith, Robert A.	Greensborough	P. M. D
Hess, Frank C.	Cadiz	R. D	Smith, Mary J.	Greensborough	P. M. 10
Hobbs, Wilson	Knightstown	R. D	Stone, Frank L.	Middletown	P. M. D
Holloway, O. E.	Knightstown	R. D	Thompson, John F.	Newcastle	H. 10
Hastings, Seth G.	Spiceland	H. D	Thornburgh, Frank L.	Middletown	R. D
Homer, Richard H.	Knightstown	P. M. D	Westerfield, J. M.	Knightstown	E. D
Hobbs, Orville W.	Ogden	R. D	Weaver, John	Knightstown	R. 10
Hollinger, F. N.	Blountsville	R. 3	Wayman, John C.	Newcastle	P. M. D
Hardesty, J. C.	Millville	R. D	Weeks, Joseph	Mechanicsb'g	P. M. D
Kissell, William	Newcastle	R. 10	Weekly, David M.	Straughan	R. D
Kiskadden, H. S.	Knightstown	R. D	Welsh, Jo. H.	Middletown	R. D
Jones, Henry W.	Spiceland	R. D	Waters, S. C.	Middletown	R. D
Jackson, Frank G.	Mt. Summit	R. 3	Winston, L. V.	Knightstown	R. D
James, John H.	Middletown	P. M. D	Weeks, Elizabeth J.	Mechanicsb'g	P. M. D
Lowman, Joseph	Mooreland	P. M. D	Williams, Geo. H.	Newcastle	P. M. D

Regular, 59; Physio-Medical, 17; Homeopathic, 3; Eclectic, 4; not reported, 1.

*Howard County.*

Armstrong, E. A.	Kokomo	R. D	Miller, Albert W.	Plevna	R. D
Bagwell, L. H.	Jerome	R. D	Miller, H. C.	Ervin	R. D
Bates, A. J.	Kokomo	R. D	Miller, L. C.	Alto	R. D
Barnett, David C.	Kokomo	R. 10	Moulder, J. McLean	Kokomo	R. D
Berst, J. H.	Kokomo	R. D	Moore, J. B.	Kokomo	R. D
Biesicker, J. W.	West Middleton	E. D	Newlin, Sylvester	New London	E. D
Conner, Levi	Jerome	R. 3	Oiler, Levi H.	Russiaville	R. 10
Cooper, William	Kokomo	E. D	Payton, W. B.	Greentown	R. D
Covalt, A. A.	Greentown	R. D	Payne, A. F.	Russiaville	R. D
Freeman, Alex	Kokomo	R. 10	Puckett, John L.	Kokomo	R. D
Garr, James O.	Kokomo	R. D	Rice, E. C.	Oakford	E. D
Gifford, T. V.	Kokomo	H. 10	Ross, J. H.	Kokomo	R. D
Green, W. A.		N. R. 3	Sawyer, E. W.	Kokomo	H. D
Haines, H. C.	Sycamore	P. M. D	Shirley, D. J.	New London	R. 10
Hull, Wm. H.	Center	R. D	Smith, A. F.		R. D
Hurlburt, David	Kokomo	E. 3	Scott, Wm.	Kokomo	R. D
Iles, S. B.	Russiaville	R. 10	Scott, G. R.	Greentown	R. D
Jack-on, R. B.	Kokomo	P. M. D	Smith, R. H.	Kokomo	R. D
Johnson, Isaac C.	Kokomo	R. D	Thorne, J. C.	Kokomo	R. D
Kern, Theo.	Kokomo	R. D	Tresslar, J. G.	Kokomo	E. D
Kern, Lewis	Kokomo	R. D	Ware, C. M.	West Liberty	R. D
Kemp, Geo. W.		R. 10	Walthall, J. G.	Sycamore	R. D
Kimball, A. D.		R. D	Wilson, R. Q.	Kokomo	R. D
Kirkpatrick, J. R.	Kokomo	R. D	Wooley, C. A.	Kappa	R. 10
Langston, Edgar		E. D	Wright, Jas. W.	Kokomo	R. D
LOVETT, JNO. A.	Kokomo	R. D			

Regular, 38; Eclectic, 8; Homeopathic, 2; Physio-Medical, 2.

*Huntington County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Bucher, J. C . . . .	Andrews . . . .	R. D	Leyman, Daniel S . .	Huntington . . . .	R. D
Brandon, W. S . . . .	Andrews . . . .	R. D	Line, B. A . . . . .	Andrews . . . . .	P. M. D
Brelsford, James W .	River . . . . .	R. D	Lyons, Wm. B . . . .	Huntington . . . .	R. D
Crandel, Thomas . . .	Majenica . . . .	E. D	Lamb, B. F . . . . .	Huntington . . . .	H. D
Carson, W. F . . . .	Roanoke . . . . .	R. D	Mock, James F . . . .	Huntington . . . .	N. R. 10
Chenoweth, G. P . . .	Mt. Etna . . . .	R. D	Mitchell, Samu'l P . .	Mt. Etna . . . . .	R. D
Chafee, Wm. C . . . .	Huntington . . . .	R. D	Palmer, Eldridge M .	Warren . . . . .	R. D
Chaffee, Alfred B . .	Roanoke . . . . .	R. D	SEVERANCE, LAGR . .	Huntington . . . .	R. D
Eversole, Chas . . . .	Huntington . . . .	R. D	Smith, Isaac A . . . .	Majenica . . . . .	R. D
Fry, Charles W . . . .	Bracken . . . . .	R. D	Shaffer, Abner H . . .	Huntington . . . .	R. D
Fisher, Erastus S . .	Brown's Corners .	R. D	Sprowl, John S . . . .	Warren . . . . .	R. D
Fish, Wm. N . . . . .		N. R. D	Scott, Joseph . . . . .	Markle . . . . .	R. 10
Grayston, F. S. C . .	Huntington . . . .	R. D	Scott, N. W . . . . .	Huntington . . . .	R. D
Grayston, B. H. B . .	Huntington . . . .	R. D	Selman, J. W . . . . .	Roanoke . . . . .	R. D
Grayston, Charles E .	Huntington . . . .	R. D	Trembley, Geo. D . . .	Bippus . . . . .	R. D
Good, Chas. H . . . .	Warren . . . . .	R. D	Williams, O. B . . . .	Andrews . . . . .	R. 10
Gemmill, Henry C . .	Markle . . . . .	R. D	Williams, Wm. H . . .	Harlansburg . . . .	R. 10
Gregg, Henry . . . . .	Roanoke . . . . .	R. D	Wright, Ervin . . . .	Roanoke . . . . .	R. D
Hall, E. V. M . . . .	Huntington . . . .	H. D	Wallace, Leroy S . . .	Hoboken . . . . .	R. D
Hilander, Wm. J . . . .	Markle . . . . .	R. 10	Yingling, Daniel . . .	Huntington . . . .	E. D
Lyons, Ira E . . . . .	Huntington . . . .	R. D	Young, Edward T . . .	Pleasant Plain N. R.	10
Leyman, Emery H . .	Huntington . . . .	R. D			

Regular, 34; Eclectic, 2; Homeopathic, 2; Physio-Medical, 1; not reported, 3.

*Jackson County.*

Anthony, James R . . .	Tampico . . . . .	R. D	May, Albert . . . . .	Crothersville . . . .	R. 10
Cummings, D. J . . .	Houston . . . . .	R. 10	Mitchell, Benton D . .		R. D
Charlton, Samuel H . .	Seymour . . . . .	R. 10	McMillan, J. P . . . .	Medora . . . . .	R. 10
Cummings, H. A . . .	Mooney . . . . .	R. 3	Murray, S. T . . . . .	Tampico . . . . .	R. 10
Curtiss, Wm. H . . . .	Seymour . . . . .	R. D	Newkirk, A. L . . . .	Seymour . . . . .	R. 10
Charles, Jasper N . . .	Tampico . . . . .	R. D	Orvis, George Q . . . .	Seymour . . . . .	R. D
Casey, W. M . . . . .	Seymour . . . . .	R. D	Osterman, A. G . . . .	Dudleytown . . . .	R. D
Carter, James H . . . .	Seymour . . . . .	R. D	Rains, Geo. W . . . . .	Cortland . . . . .	R. 3
Coryell, Samuel . . . .	Crothersville . . . .	R. D	Ruddick, Lindley . . .	Reddington . . . .	R. D
Chute, George . . . . .	Freetown . . . . .	R. 10	Richards, Thomas J . .	Mooney . . . . .	R. 10
Converse, Elmer A . . .	Retreat . . . . .	E. D	Reed, E. P . . . . .	Ewing . . . . .	R. 10
Ewing, Francis M . . .	Vallonia . . . . .	R. 10	Shipman, N. N . . . .	Seymour . . . . .	R. D
Gerrish, M. F . . . . .	Seymour . . . . .	R. D	Shields, J. T . . . . .	Seymour . . . . .	R. 10
Galbraith, Thomas S . .	Seymour . . . . .	R. 10	SHIELDS, JAMES M . .	Seymour . . . . .	R. D
Gibson, G. W . . . . .	Houston . . . . .	R. 10	Stilwell, Joseph A . . .	Brownstown . . . .	R. D
Gabbart, W. H . . . .	Tampico . . . . .	E. D	Severinghaus, J. F . .	Seymour . . . . .	— 10
Green, W. O . . . . .	Dudleytown . . . .	R. 10	Tinch, E. T . . . . .	Ewing . . . . .	R. D
Hamilton, R. A . . . .	Brownstown . . . .	— 10	Whitehead, W. E . . .	Brownstown . . . .	R. D
Hunter, Charles A . . .	Reddington . . . .	P.-M. D	Wells, James C . . . .	Mooney . . . . .	R. D
Kyte, Henry . . . . .	Cortland . . . . .	P.-M. D	Warner, W. H . . . .	Crothersville . . . .	R. D
Monroe, V. H . . . . .	Seymour . . . . .	R. 10	Wilson, M. V . . . . .	Medora . . . . .	R. 10
Manuel, Gratton . . . .	Freetown . . . . .	R. 10			

Regular, 37; Eclectic, 2; Physio-Medical, 2; not reported, 2.

*Jasper County.*

Alter, M. B . . . . .	Rensselaer . . . .	R. 3	Loughridge, J. H . . .	Rensselaer . . . .	R. 3
Antrim, Thomas . . . .	Rensselaer . . . .	R. 10	Maxwell, S. C . . . .	Rensselaer . . . .	R. 3
BITTERS, F. P . . . .	Rensselaer . . . .	R. D	Merry, J. W . . . . .	Mount Ayr . . . . .	R. 3
Bowman, Wm . . . . .	Blackford . . . .	R. 10	Patton, D. H . . . . .	Remington . . . . .	R. D
Deming, J. C . . . . .	Rensselaer . . . .	R. 10	Pavin, Daniel . . . . .		R. 10
Hartsell, W. W . . . .	Rensselaer . . . .	H. D	Reagle, M. W . . . . .	Remington . . . .	R. 3
Jones, H. J . . . . .		R. 3	Robb ns, Ira B . . . .	Rose Lawn . . . . .	H. 10
Kidd, W. J . . . . .		E. D	Stockwell, Willard . .	Rensselaer . . . .	R. 10
Lanston, H . . . . .	Remington . . . .	R. D	Washburn, I. B . . . .	Rensselaer . . . .	R. D

Regular, 15; Homeopathic, 2; Eclectic, 1.

*Jay County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Abel, Oscar E	Bryant	R. D	Kidder, J. F	New Mt. Pleasant	R. 10
Anderson, James M	Dunkirk	R. 10	Mackey, Charles W	Portland	R. D
Anderson, James H	Dunkirk	H. 10	Milligan, Arthur A	Portland	P. M. 10
Arthur, C. S.	Portland	R. 3	Moon, Ezra W	Portland	E. D
Brown, H. V.	Portland	R. D	McFarland, Norman	New Pittsburg	R. 3
Bosworth, J. M.	Pennville	R. D	Miles, Jacob T.	Bryant	R. D
Blackledge, L. N.	Pennville	E. D	Morehouse, John A.	Portland	P. M. D
Blackledge, Am. J.	Pennville	E. D	Munsey, Samuel E.	New Mt. Pleasant	R. 10
Brayton, Rufus W.	New Corydon	R. D	Ma on, Samuel.	Pennville	R. D
Clevenger, Benj. J.	Red Key.	R. D	Mincks, Francis W.	Portland	H. 3
Connor, Norris F.	Red Key.	E. D	Poling, S. K.	Portland	E. D
Crogan, John M.	Dunkirk	R. D	Rarick, Isaac N.	Bluff Point	P. M. D
Couti, Lewis J.	Hector	R. D	Ralston, Augustus	New Corydon	R. D
Dickes, Philip	Boundary	R. D	Ross, John G.	Westchester	E. D
Davis, R. P.	Portland	R. D	SIMS, I. G.	Portland	R. D
Dickes, John T.	Portland	R. D	Shepherd, Thomas S.	Portland	R. 10
France, John W.	Dunkirk	R. D	Shepherd, Geo. W.	Red Key.	R. 10
Furtich, Geo. W.	Dunkirk	R. D	Stanton, David S.	Portland	R. 10
Glentzer, M. A.	Bryant	R. 10	Skinner, David T.	Salamanca	E. D
Gillum, James	Portland	E. 10	Selvey, Samuel S.	Dunkirk	R. D
Gillum, Stephen A. D.	Portland	R. 3	Saunders, C. B.	Pennville	P. M. D
Guy, Samuel D.	Bryant	N. R. 10	Stick, Jesse.	Bryant	E. D
Hutchens, Henry C.	Portland	E. 10	Smith, William.	Portland	N. R. 10
Horn, William C.	Pennville	R. D	Sage, Ira T.	Red Key.	R. 10
Hutchison, Jas. A.	Salamanca	R. D	Stiers, Francis R.	Red Key.	E. D
Hall, John W.	Portland	R. D	Thomas, S. A.	Pennville	N. R. 10
Hamilton, R. A.	Portland	E. 10	White, Thomas C.	Powers	R. 10
Kinsey, David S.	Portland	R. 3	Wicks, James	Bryant	R. 10

Regular, 35; Eclectic, 12; Physio-Medical, 4; Homeopathic, 2; not reported, 3.

*Jefferson County.*

Birdsal, Chas. A.	Lancaster	— 3	Lewis, Jas. R.	Madison	R. D
Brenge, J. S.	Hanover	R. D	Lewis, Geo. B.	Dupont	R. D
Christine, Jas. H.	Canaan	R. D	Lewis, Samuel B.	Canaan	R. D
Conklin, E. L.	Madison	R. D	Mathews, Jas. H.	Madison	R. D
Cornett, Wm. T.	Madison	R. D	McCoy, Wm. A.	Madison	R. D
Cooperider, Jefferson	Madison	R. D	MURETT, JAS. A.	Madison	R. D
Ford, S. M.	Madison	R. D	McCarty, W.	Canaan	R. D
Forshee, W. T.	Madison	R. D	Penn, B. F.	Bryansburg	E. D
Firth, C. C.	Wirt	R. D	Penn,	Bryansburg	— 3
Hewitt, G. W.	Madison	R. D	Reynolds, Jno. H.	Wirt	— 10
Hunt, Jno. S.	Madison	R. D	Reynolds, Geo. C.	Kent	R. D
Hutchings, W. D.	Madison	R. D	Ryker, Chas.	Manville	R. D
Hutchingson, J. B.	Madison	R. D	Smith, E. M.		— 10
Johnson, A. H.		R. D	Shirtz, J. B.		E. —
Julian, Paris	Vineent	— 10	Tevis, E. R.	Brooksburg	R. D
Lawder, W. J.	Brooksburg	R. D	Tevis, R. M.	Brooksburg	R. D
Lefebvre, Jas. M.	Graham	R. D	Townsend, S. M.	Madison	R. D
Lewis, J. F.	Dupont	R. D	Wright, C. H.	N. Madison	R. D
Lewis, Geo. C.	Madison	R. D			

Regular, 30; Eclectic, 1; not reported, 5.

*Jennings County.*

Adams, S. D.	Brewersville	R. 3	MITCHELL, J. F.	Vernon	R. D
Amick, C. C.	Six Mile	R. D	Mitchell, Walter J.	Vernon	R. D
Case, W. W.	Zenas	R. D	Miller, T. E. F.	Six Mile	P. M. D
Croven, F. M.	Zenas	E. 10	McGinty, John	North Vernon	R. D
Fall, William	North Vernon	R. D	Nelson, H. G.	Butlerville	R. D
Firsich, B.	North Vernon	N. R. 10	Nighswander, M.	Six Mile	R. D
Gaddy, N. D.	Lovett	R. D	Reynolds, S. H.	Scipio	R. D
Gaddy, Orvill	Paris	R. D	Russell, Benj. F.	Paris	R. D
Green, James H.	North Vernon	R. D	Richardson, N.	Vernon	R. D
Green, C. H.	North Vernon	R. 3	Richardson, Wm. H.	Vernon	R. D
Hanna, A. L.	Paris Crossing	R. D	Remy, Wm. H.	Zenas	N. R. 3
Hicks, B. R.	Nebraska	P. M. D	Spencer, John A.	San Jacinto	R. D
Kyle, James W.	North Vernon	R. D	Shepherd, J. F.	Queensville	N. R. 10
Kendrick, N. C.	Butlerville	R. 10	Scott, W. L.	Brewersville	P. M. D
Lyle, John M.	Cana	R. D	Wilson, Cyrus L.	Lovett	R. D
Light, A. B.	North Vernon	R. D	Wiles, C. H.	Six Mile	R. D
Lefebvre, James M.	Paris	R. D	Wildman, W. H.	San Jacinto	R. D

Regular, 27; Physio-Medical, 3; Eclectic, 1; not reported, 3.

*Johnson County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Adams, J. H. . . . .	Amity . . . . .	N. R. 10	Lanan, J. H. . . . .	Nineveh. . . . .	R. D
Adams, David . . . .	Edinburg . . . .	E. D	Miller, A. . . . .	Whiteland. . . .	R. D
Beebe, James . . . .	Whiteland . . . .	N. R. 10	Marshall, J. A. . . .	Nineveh . . . . .	N. R. 3
Bland, John A. . . .	Edinburg . . . .	R. D	Maze, T. B. . . . .	Needham . . . . .	N. R. 3
Byers, R. S. . . . .	Samaria . . . . .	R. D	Mercer, J. T. . . . .	Rocklane . . . . .	R. D
Covert, G. W. . . . .	Whiteland . . . .	N. R. 3	Noble, T. B. . . . .	Greenwood. . . .	N. R. 10
Carnes, Z. chariah . .	Greenwood . . . .	R. D	Ott, L. E. . . . .	Franklin . . . . .	R. D
Cravens, J. R. . . . .	Franklin . . . . .	N. R. 3	Payne, P. W. . . . .	Franklin . . . . .	R. D
Curry, Thomas W. . .	Greenwood . . . .	R. D	Province, W. M. . . .	Providence . . . .	R. D
Day, F. B. . . . .	Franklin . . . . .	R. D	Paine, Luther . . . .	Edinburg . . . . .	E. D
Donnell, Jno. H. . . .	Franklin . . . . .	N. R. 10	Quick, R. S. . . . .	Edinburg . . . . .	E. D
Donnell, T. C. . . . .	Franklin . . . . .	R. D	Rush, W. P. . . . .	Edinburg . . . . .	R. D
Dixon, John W. . . . .	Nineveh. . . . .	R. D	Rean, J. B. . . . .	Trafalgar . . . . .	R. D
Dobyns, K. P. . . . .	Whiteland . . . .	R. D	Sadler, J. J. . . . .	Edinburg . . . . .	R. D
Davis, A. T. . . . .	Edinburg. . . . .	N. R. 10	Surface, O. B. . . . .	Bluff Creek . . . .	N. R. 3
Farris, J. T. . . . .	Bargersville. . . .	R. D	Taggart, R. . . . .	Franklin . . . . .	R. D
Fisher, J. C. . . . .	Needham . . . . .	R. D	Telford, W. E. . . . .	Bargersville . . . .	R. D
George, J. D. . . . .	Franklin . . . . .	H. D	Wood, John C. . . . .	Franklin . . . . .	R. D
Gillaspi, Frank. . . .	Providence . . . .	R. D	Wishard, J. M. . . . .	Greenwood . . . .	R. D
Hendricks, W. C. . . .	Franklin . . . . .	R. D	Wallace, B. . . . .	Franklin . . . . .	R. D
Hall, W. C. . . . .	Franklin . . . . .	R. D	Willan, E. B. . . . .	Trafalgar . . . . .	R. D
Hall, H. J. . . . .	Franklin . . . . .	R. D	Willan, R. D. . . . .	Trafalgar . . . . .	R. D
Hibbs, Irwin . . . . .	Bluff Creek . . . .	N. R. 10	Whiteside, C. E. . . .	Edinburg . . . . .	R. D
Jones, J. T. . . . .	Franklin . . . . .	R. D	Wright, A. F. . . . .	Nineveh. . . . .	R. D
Kegley, Jno L. . . . .	Stone's Cross'g . .	N. R. 3	WHITESIDE, L. L. . .	Franklin . . . . .	R. D

Regular, 34; Eclectic, 3; Homeopathic, 1; not reported, 12.

*Knox County.*

Boyer, Eli . . . . .	Vincennes . . . .	R. D	Martin, Zadok G. . . .	Bruceville . . . .	R. D
Beard, Schuyler C. . .	Vincennes . . . .	R. D	Milam, John W. . . . .	Bruceville . . . .	R. D
Beard, Ferdinand W. .	Vincennes . . . .	R. D	Medcalf, William M. .	Vincennes . . . . .	H. D
Busse, Edward P. . . .	Vincennes . . . .	R. D	Merritt, James N. . . .	Emison . . . . .	R. 3
Black, Elijah C. . . .	Wheatland . . . .	R. 3	Moore, Reuben G. . . .	Vincennes . . . . .	R. D
Bever, Almira C. W. .	Vincennes . . . .	E. D	Meyer, Herman N. H. .	Freelandsville . .	E. 10
Bever, John C. . . . .	Vincennes . . . .	P.-M. 3	McGauby, Andrew J. .	Freelandsville . .	R. D
Bedell, William B. . .	Vincennes . . . .	R. D	McDowell, James M. .	Bruceville . . . . .	R. D
Barnett, John H. . . .	Monroe City . . . .	E. 10	McDowell, M. M. . . .	Freelandsville . .	R. D
Cross, John F. . . . .	Decker . . . . .	R. 3	McGowan, William . .	Oaktown . . . . .	R. 10
Dorsey, George L. . . .	Bicknell . . . . .	R. D	Owings, Thomas B. . .	Oaktown . . . . .	R. 3
Dukate, Jno. S. . . . .	Wheatland . . . .	R. D	Pugh, John W. . . . .	Oaktown . . . . .	R. D
Dukate, John B. D. . .	Wheatland . . . .	R. D	Robbins, John F. . . .	Freelandsville . .	R. D
Davenport, Wm. H. . .	Vincennes . . . .	R. D	Randolph, John A. . .	Vincennes . . . . .	R. D
Davis, Royce . . . . .	Decker . . . . .	R. D	Ray, Joel W. . . . .	Emison . . . . .	P.-M. 10
Fairhurst, O'Connell. .	Vincennes . . . .	R. D	Reeves, Joseph L. . . .	Edwardsport . . .	R. D
Foulks, Charles A. . .	Vincennes . . . .	R. D	Ricketts, Reuben R. . .	Redcloud . . . . .	R. 10
Grigsby, William B. . .	Oaktown. . . . .	R. D	Staley, Lewellen B. . .	Bicknell . . . . .	R. D
Harris, Francis M. . . .	Vincennes . . . .	R. D	Smith, Hubbard M. . . .	Vincennes . . . . .	R. D
Harrison, Samuel L. . .	Vincennes . . . .	R. 3	Spaulding, Thomas . .	Edward-port . . . .	E. D
Hunt, Thomas J. . . . .	Monroe City. . . .	R. 3	Spaulding, George L. .	Sandborn . . . . .	R. 3
Harris, William B. . .	Vincennes . . . .	R. D	SWARTZEL, J. A. . . .	Vincennes . . . . .	R. D
Hensley, John H. . . .	Vincennes . . . .	R. D	Sabin, Almer L. . . . .	Washington . . . .	R. D
Jessup, Robert B. . . .	Vincennes . . . .	R. D	Sparks, Nathan B. . . .	Monroe City . . . .	R. 10
Jessup, Robert B., Jr. .	Vincennes . . . .	R. D	Trueblood, J. W. . . .	Monroe City . . . .	R. 3
Keith, Benjamin F. . .	Edwardspport . . .	R. D	Von Tress, Edward C. .	Monroe City . . . .	R. D
Kessinger, William E. .	Sandborn . . . . .	R. D	Williams, James T. . . .	Monroe City . . . .	E. D
Lytton, Jefferson . . .	Wheatland . . . .	R. 3	Warren, Solomon C. . .	Vincennes . . . . .	H. D

Regular, 47; Eclectic, 5; Homeopathic, 2; Physio-Medical, 2.

*Kosciusko County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Amiss, James M.	Silver Lake	R. D	Moody, Theodore F.	Piercetion	R. D
Bee-nell, J. J.	Milford	R. D	Mora, Francis	Warsaw	E. D
BURKET, C. W.	Warsaw	R. D	Marine, John W.	Etna Green	P. M. D
Burket, Benjamin	Warsaw	R. D	Ogle, John J.	North Webster	E. 10
Bash, J. M.	Warsaw	R. D	Pearman, Francis M.	Palestine	R. D
Brown, Geo. M.	Claypool	R. D	Parks, John P.	Atwood	R. D
Boydston, Benj. S.	Clunette	E. 10	Parker, J. W.	Oswego	E. 10
Bigelow, Seth G.	Silver Lake	E. 3	Robison, A. B.	Mentone	R. D
Barr, J. Wesley.	Silver Lake	E. 10	Robison, Sarah M.		R. 10
Byler, J. M.	Warsaw	H. D	Surguy, Allen B.	Mentone	R. D
Burns, Anthony M.	Silver Lake	— D	Swygart, Henry M.	Atwood	R. D
Brumbaugh, F. M.	Gravelton	E. D	Shackleford, T. J.	Warsaw	R. D
Cammack, Thomas	Milford	R. D	Schoonover, Wm. R.	Leesburg	R. D
Chandler, J. A.	Warsaw	R. 3	Stockberger, Eman'l.	Mentone	R. 3
Clayton, Calvin M.	Warsaw	E. 10	Swyhart, Calvin M.	Warsaw	P. M. 10
Dick, Milford L.	Piercetion	P. M. D	Smith, James S.	Warsaw	P. M. D
Furlong, Marie J.	Warsaw	E. D	Scott, William	Piercetion	E. 10
Hazel, John B.	Claypool	R. D	Swafford, Marion F.		— D
Hayes, William	Piercetion	E. D	Sherbondy, Geo. W.		E. D
Holloway, John M.	Etna Green	E. D	Terry, Percy E.	Silver Lake	R. 3
Heffley, John W.	Sevastopol.	E. D	Terry, Daniel E.	Silver Lake	R. 10
Hoopingarner, G. B.	— D	— D	Towl, Amos M.	Sevastopol.	R. 10
Ihrig, Francis M.	Syracuse.	E. D	Tenant, Lewis H.	Piercetion	E. 10
Junkins, Sam'l B.	North Webster	R. 10	Vaugh, Martin	Packerton	R. 3
King, Hiram O.	Piercetion	R. D	Webber, Irvin B.	Warsaw	R. 10
Ketchum, George.	Claypool.	R. D	Whitney, Lorenza W.	Warsaw	R. D
Kelly, William M.	Milwood	R. D	Williams, Freeman S.	Burket.	R. D
Keehn, Levi	Milford	H. 10	Woolley, Amos.	Warsaw	E. D
Kelly, David C.	Syracuse.	E. 10	Wright, Mark R.	Silver Lake	E. 10
Long, Charles R.	Piercetion	R. D	Wall, James J.	Beaver Dam	E. 10
Lancaster, Thomas A.	Sidney	R. D	White, R. Parks	Warsaw	R. D
Loring, Samuel C.	— D	— D			

Regular, 32; Eclectic, 20; Homeopathic, 2; Physio-Medical, 4; not reported, 6.

*Lagrange County.*

Burden, Levi	Haw Patch	E. 10	Newnam, Hennan M.	South Milford	R. D
Balluh, Wm. J.	Mongo	R. D	Price, Henry B.	Woodruff	R. D
Benhum, Frank A.	Lagrange	H. D	Raby, Wm	Wolcottville	E. 10
Dryer, D. W.	Lagrange	R. D	Straun, E. K.	Wolcottville	R. D
Dayton, Geo. H.	Lima	R. D	Schrock, H. W.	Shore	R. D
Dancer, John	South Milford	R. D	Short, William	Lagrange	R. D
Engle, Jacob B.	Lagrange	N. R. 10	Short, John L.	Lagrange	R. D
Ferguson, W. A.	Brighton	R. D	Spaulding, O. M.	Brushy Prairie	E. 10
Grubb, W. B.	Scott	N. R. 10	Toms, Alpheus	Scott	R. D
Goodrich, Chas. D.	Lima	R. D	Waddell, Chas	Lagrange	R. D
Hughes, William	Lima	R. D	WHITE, EDWARD G.	Lagrange	R. D
Heslip, Jas. M.	South Milford	E. 10	Work, Samuel A.	Wolcottville	R. D
McCoy, Walter T.	Mongo	R. D	Youngkin, Jerome W.	Wolcottville	N. R. 10
Niman, J. P.	Lagrange	R. D			

Regular, 19; Eclectic, 3; Homeopathic, 1; not reported, 3.

*Lake County.*

Brannon, George R.	Crown Point	R. D	Miller, H. F. C.	Hobart	R. D
BLISS, M. G.	C own Point	E. D	Mackey, R. C.	Deep River	E. D
Bassett, G. R.	Hobart	E. D	Merrill, W. W.	Hammond	E. D
Bassett, S. A.	Hobart	E. D	Mullen, H. E.	Hammond	R. D
Davis, John E.	Lowell	R. D	Pratt, A. J.	Crown Point	R. D
Groman, Charles	Brunswick	H. 10	Pettibone, Henry	Crown Point	R. D
Gerrish, A. A.	Lowell	R. D	Pettibone, Harvey	Crown Point	R. 3
Gordon, P. P.	Hobart	R. D	Seidler, Anthony	Dyer	R. 10
Higgins, John	Crown Point	R. D	Schroeder, N. J.	Hammond	R. D
Johns, J. W.	Dyer	R. D	Schreiber, W. H.	Hanover Center	E. D
Iddings, H. L.	Merrillville	R. D	Tarsman, L. L.	Hammond	R. D
Koppe, John	Hammond	R. D	VanDewalker, J. G.	Hammond	E. D
King, C. W.	Crown Point	E. 3	Woods, James A.	Lowell	R. 10

Regular, 19; Eclectic, 8; Homeopathic, 1.

*Laporte County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Annis, E. L.	Laporte	R. D	Ludwig, C. H.	Laporte	H. D
Andrew, Geo. L.	Laporte	R. D	Martin, J. S.	Rolling Prairie	R. 10
Brown, D. T.	Michigan City	R. D	Meyer, J. H. Wm.	Laporte	R. D
Bowell, B. C.	Rolling Prairie	E. D	Mullen, A. J.	Michigan City	R. D
GRANDALL, R. O.	Laporte	R. 10	Rose, L. C.	Laporte	R. D
Crumpacker, D. S.	Union Mills	R. 10	Rogers, E. A.	Laporte	R. D
Cole, E. Z.	Michigan City	H. D	Reed, Mrs. Mary J.	Rolling Prairie	R. 10
Calvert, R. H.	Michigan City	R. D	Short, —	Union Mills	P. M. D
Darling, N. S.	Laporte	R. D	Shultz, Henry	Michigan City	R. 10
Dakin, Geo. M.	Laporte	E. D	Sharples, P. D.	Rolling Prairie	R. 10
Ellsworth, H. N.	Kingsbury	R. D	Sovereign, L. A.	Michigan City	R. 10
Englerth, J. T.	Hanna	P. M. D	Stevenson, A. G.	Laporte	R. D
Fisher, W. H.	Wanatah	R. D	Stevens, Mrs. M. A.	Laporte	E. D
Travel, Theophilus.	Westville	R. D	Smith, Alpheus M.	Hanna	P. M. D
Fahnestock, Camillus	Laporte	H. D	Tilden, Jno. F.	Wanatah	R. 10
Fahnestock, Aug'sts	Laporte	H. D	Tillotson, A. G.	Michigan City	E. D
Godfrey, W. R.	Michigan City	R. D	Warren, C. R.	Otis	R. D
Hollenbeck, B. W.	Westville	E. 3	Whiting, S. C.	Laporte	H. D
Keene, Lorenzo	Laporte	R. D	Wilson, W. B.	Rolling Prairie	E. 10
Lambert, J. W.	Laporte	R. D	Wile, Jacob, Jr.	Laporte	R. D

Regular, 27; Eclectic, 6; Homeopathic, 5; Physio-Medical, 3.

*Lawrence County.*

Allen, Edward F.	Fayetteville	R. D	LARKIN, JNO. B.	Mitchell	R. D
Bare, Addison W.	Mitchell	R. D	Lowder, Cyrus	Springville	R. D
Benton, Jno	Georgia	R. 10	McDonald, A. J.	Mitchell	R. D
Berry, A. F.	River Vale	R. 10	McIntire, E. S.	Mitchell	R. D
Burton, Geo. W.	Mitchell	R. D	McLahlan, Oliver	Bartlettville	R. 3
Burton, Wm. A.	Mitchell	R. D	Newland, C. W.	Silvertown	R. D
Butler, Wm. C.	Huron	R. 3	Newland, Benj	Bedford	R. D
Dixon, H. C.	Tunnelton	R. D	Newland, J. W.	Bedford	R. D
Donica, Thomas M.	Fort Ritner	R. 10	Pearson, J. C.	Mitchell	R. D
Ellison, W. T.	Heltonville	R. D	Phipps, J. W.	Heltonville	R. D
Faubion, Jas.	Heltonville	R. 10	Raridon, S. A.	Bedford	R. 10
Faucette, Jno. H.	Williams	R. D	Raridon, C. E.	Bedford	R. D
Freeland, Jno. L.	Bedford	R. D	Smith, W. H.	Leesville	R. 10
Gardner, Joseph	Bedford	R. D	Smith, S. W.	Leesville	R. D
Honocker, L. D.	Silvertown	R. 10	Voyles, Harvey	Fayetteville	R. D
Hunter, F. S.	Fort Ritner	R. D	Yost, J. L. W.	Mitchell	R. D
Johnson, J. J.	Bedford	R. D	Yandell, Wm	Huron	R. 10

Regular, 36.

*Madison County.*

Atherton, Romeo	Anderson	H. D	Hockett, Zimri	Anderson	H. D
Armfield, J. D.	Elwood	R. D	Harter, Wm. P.	Anderson	R. 3
Aldred, John A.	Fishersburg	R. D	Hunt, John W.	Alexandria	R. D
Armington, Chas. L.	Chesterfield	R. 3	Harter, Jacob H.	Anderson	R. 3
Alexander, Lot E.	Pendleton	R. D	Hunt, Wm. A.	Anderson	R. 3
Broadbent, Oliver	Anderson	R. D	Hunt, Thos. M.	Summitville	E. 3
Brown, Martin	Summitville	R. D	Huston, A. S.	Pendleton	P. M. D
Brandon, J. F.	Anderson	R. 3	Hilligoss, G. N.	Fishersburg	R. 3
Brickley, W. P.	Anderson	P. M. 10	Hougham, John S.	Perkinsville	R. D
Brownback, O. W.	Pendleton	R. D	Jones, Hoarce E.	Anderson	R. D
Branch, Chas. N.	Perkinsville	R. D	Milliken, Jabez H.	Elwood	R. D
Boyd, W. A.	Chesterfield	R. D	Marlow, Austin F.	Summitville	P. M. D
Chittenden, Geo. F.	Anderson	R. D	Morgan, Wm. J.	Gilman	R. 10
Covertson, J. W.	Frankton	R. 10	Mitchell, Walter P.	Markleville	R. D
Calloway, Beniah T.	Elwood	R. 10	Lewis, Walter H.	Pendleton	R. D
Cranfield, Martin L.	Summitville	N. R. 10	McGrannahan, G. W.	Anderson	R. D
Cook, Ward	Pendleton	R. D	McNutt, G. T.	Elwood	R. D
Cook, John W.	Pendleton	R. D	Nazum, David P.	Elwood	E. 3
Cullen, John C.	Anderson	R. D	Perry, Andrew J.	Alexandria	R. D
Cook, Daniel	Fishersburg	R. 10	Perry, John W.	Alexandria	R. D
Chiles, B. F.	Frankton	P. M.	Pugh, Joseph W.	Alexandria	R. D
Clark, Thos. J.	Summitville	N. R. D	Pugh, Joseph	Alexandria	R. 3
Cook, Ben Harvey	Markleville	R. D	Petro, Benj. L.	Orid	R. 10
Coldren, William	—	P. M. D	Rogers, Ellen P.	Pendleton	H. 10
Cook, Joel	Orestes	R. 3	Rumyan, James F.	Alexandria	P. M. D
DIVEN, CHAS. E.	Anderson	R. D	Rider, D. M.	Anderson	R. 10
Davidson, G. W.	Pendleton	P. M. D	Stewart, Jonas	Anderson	R. D
Ebert, John D.	Dundee	R. 10	Sigler, Daniel	Elwood	R. D
Edwins, Stanley W.	Frankton	R. D	Swallow, Geo. E.	Summitville	R. D
Fernandez, Daniel H.	Anderson	R. D	Sims, Thos. S.	Elwood	E. 10
Fussell, B. Lundy	Markleville	R. D	Suman, Wm	Anderson	R. 3
French, Wm. J. L.	Frankton	R. D	Saunders, Joseph	Anderson	R. D
Fisher, Mar. J. L.	—	P. M. D	Spann, B. F.	Anderson	R. D
Garretson, Will M.	Perkinsville	R. D	Vanmetre, Isaac N.	Florida	R. 3
Guisinger, John S.	Florida	R. 10	Wickersham, Noah L.	Anderson	R. D
Ginn, James F.	Elwood	P. M. D			

Regular, 54; Homeopathic, 3; Physio-Medical, 9; Eclectic, 4; not reported, 3.

## Marion County.

Name.	Postoffice.	School.	Name.	Postoffice.	School.
Abbott, C. H.	Indianapolis	E. 3	Culver, T. M.	Indianapolis	E. D
Abbott, F. M.	Indianapolis	R. D	Cunningham, H. S.	Indianapolis	R. D
Abbott, L.	Indianapolis	E. D	Daugherty, J. H.	Irvington	R. D
Abbott, B. F.	Indianapolis	E. D	Darrach, Geo. M.	Cumberland	R. 10
Allen, H. R.	Indianapolis	R. 3	Davis, R. H.	Indianapolis	R. D
Allen, Wesley	West Newton	R. D	Davis, W. C.	Indianapolis	R. D
Anderson, Jas. E.	Indianapolis	N. R. D	Denke, Walter, Wm	Indianapolis	N. R. D
Anthony, E.	Indianapolis	P. M. D	DePuey, C. H.	Indianapolis	E. D
Bacon, E. H.	Indianapolis	N. R. 10	Direns, C. W.	Indianapolis	E. 3
Bailey, W. P.	Southport	R. D	Dunn, J. R.	Indianapolis	N. R. 3
Ball, A. W.	Indianapolis	R. D	Duncan, Hiram	Indianapolis	R. D
Ballard, J. H.	Indianapolis	R. D	Dunlap, J. M.	Indianapolis	R. D
Baker, A. B.	Indianapolis	E. D	Dunning, J. A.	Indianapolis	R. D
Barbour, O. P.	Indianapolis	R. D	Karp, S. E.	Indianapolis	R. D
Baughman, S. S.	Indianapolis	R. D	Eastman, Joseph	Indianapolis	R. D
Barnes, C. A.	Brightwood	R. D	Edenharter, G. F.	Indianapolis	P. M. D
Barnes, H. F.	Indianapolis	R. D	Elbert, S. A.	Indianapolis	R. D
Bates, J. W.	Broad Ripple	R. D	Elder, E. E.	Indianapolis	R. D
Bedford, C. T.	Indianapolis	P. M. D	Ellis, J. W.	Indianapolis	R. D
Bell, Guido	Indianapolis	R. D	Ewing, C. K.	Malott Park	R. D
Bennett, Peter S.	Indianapolis	N. R. 10	Farber, J. H.	Indianapolis	R. D
Bieblinger, Jno	Cumberland	R. D	Farmer, S. W.	Indianapolis	E. D
Robbs, A. J.	Indianapolis	R. D	Feree, S. M.	Indianapolis	R. D
Bower, Jno. V.	Millersville	R. D	Feree, F. M.	Indianapolis	R. D
Bonett, J. L.	Indianapolis	R. D	Ferguson, F. G.	Indianapolis	R. D
Boyd, J. T.	Indianapolis	R. D	FIELD, M. H.	Indianapolis	R. D
Boyden, W. H.	Indianapolis	R. D	Field, N. E.	Cumberland	R. D
Boynton, C. S.	Indianapolis	R. D	Fisher, Amos W.	Indianapolis	P. M. D
Bigger, Robt. H.	Indianapolis	R. D	Fletcher, C. I.	Indianapolis	R. D
Brayton, A. W.	Indianapolis	R. D	Fletcher, W. B.	Indianapolis	R. D
Brown, J. S.	Castleton	R. D	Freitsh, J. M.	Indianapolis	H. 10
Brennen, E. J.	Indianapolis	R. D	French, M. J.	Indianapolis	R. D
Briggs, E. E.	Indianapolis	H. D	Gerver, J. J.	Indianapolis	R. D
Brown, C. S.	Gallsudet	H. D	Gill, J.	Indianapolis	N. R. 10
Brown, Geo. J.	Indianapolis	R. 3	Ging, William	Indianapolis	N. R. 3
Brown, H. J.	Indianapolis	R. D	Gooden, W. F.	Indianapolis	N. R. D
Brown, J. L.	Indianapolis	R. D	Graydon, R. G.	Southport	R. D
Brown, Jno. R.	Insane Hospital	R. D	Greater, G. A.	Indianapolis	R. D
Brown, J. S.	Indianapolis	R. 3	Griggs, O. B.	Bridgeport	R. D
Brown, S. M.	Gallsudet	R. 10	Hadley, Evan	Indianapolis	H. D
Brown, W. M.	Indianapolis	E. D	Haggart, David	Indianapolis	H. D
Brown, M. M.	Clermont	N. R. D	Hanser, E. A.	Indianapolis	N. R. D
Browning, W. J.	Clermont	R. D	Harvey, E. V.	Indianapolis	R. D
Blair, John M.	Indianapolis	R. D	Harvey, W. D.	Indianapolis	N. R. D
Blu, U. L.	Indianapolis	N. R. 10	Hasley, Marietta	Indianapolis	R. D
Bryan, D. C.	Indianapolis	R. D	Hasty, George	Indianapolis	P. M. D
Bryan, T. N.	Indianapolis	R. D	Haugh, J. A.	Indianapolis	R. D
Bryant, Jas.	Indianapolis	N. R. 10	Haughton, R. E.	Indianapolis	R. D
Bula, R. W.	Indianapolis	R. 10	Harvey, V. B.	Indianapolis	R. D
Butterfield, S. A.	Indianapolis	R. D	Haynes, J. R.	Indianapolis	H. D
Burford, J. T.	Indianapolis	R. D	Hays, W. F. R.	Indianapolis	R. D
Byrnes, D. C.	Indianapolis	R. D	Hendricks, W. W.	Indianapolis	E. D
Cain, J. C.	Haughville	R. D	Hendricks, W. F.	Indianapolis	N. R. D
Cameron, Jno. J.	Indianapolis	N. R. D	Heil, C. P.	Indianapolis	E. D
Campbell, L. S.	Indianapolis	R. D	Helming, Herman	Indianapolis	N. R. 10
Cary, George A.	Indianapolis	R. D	Heltman, J. K.	Oaklandon	R. D
Carson, L. O.	Traders' Point	R. D	Henthorne, L. S.	Indianapolis	R. D
Case, L. B.	Indianapolis	R. 3	Hervey, J. W.	Indianapolis	R. D
Carter, James	Indianapolis	R. 3	Hettinger, J. B.	Indianapolis	R. D
Carwin, James N.	Indianapolis	N. R. 10	Hodges, E. F.	Indianapolis	R. D
Chambers, Jno.	Indianapolis	R. D	Hoover, Jno. E.	Indianapolis	R. D
Clark, Wm. B.	Indianapolis	H. D	Hoss, J. V.	Indianapolis	R. D
Clark, W. H.	Indianapolis	N. R. 10	Houser, J. A.	Indianapolis	R. D
Clemmer, F. O.	Indianapolis	H. D	Howard, Edward	Indianapolis	E. D
Cline, L. C.	Indianapolis	R. D	Hinshaw, T. M.	Nora	R. D
Cloab, C. F.	Indianapolis	N. R. 10	Hurley, M. F.	Indianapolis	E. 3
Coble, Geo. A.	New Augusta	R. D	Jameson, Henry	Indianapolis	R. D
Collins, W. F.	Cumberland	N. R. D	Jameson, P. H.	Indianapolis	R. D
Cominger, J. A.	Indianapolis	R. D	Jeffries, W. E.	Indianapolis	R. D
Conner, W. H.	Indianapolis	N. R. 10	Johnson, W. H.	Brightwood	R. D
Cook, Geo. J.	Indianapolis	R. D	Johnson, W. P.	Indianapolis	R. 3
Compton, J. A.	Indianapolis	H. D	Jordan, J. S.	Indianapolis	E. D
Coombs, Geo. W.	Indianapolis	R. D	Jones, Stephen	Indianapolis	E. D
Cooper, C. A.	Indianapolis	N. R. 10	Karstetter, W. B.	N. Indianapolis	R. D
Corey, A. F.	Oaklandon	E. D	Keegan, J. A.	Indianapolis	R. D
Cress, Jno. B.	Indianapolis	E. D	Kerley, R. M.	Indianapolis	N. R. D
Crist, D. O.	Indianapolis	E. D	Kerley, Jno. V.	Acton	R. D
Culbertson, J. W.	Indianapolis	R. N. 10	Kennedy, W. H.	Indianapolis	E. D
Culbertson, W. D.	Indianapolis	R. D	Kendrick, W. H.	Indianapolis	E. D
			Kidd, W. J.	Indianapolis	E. D

*Marion County—Continued.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Kindleberger, W. H.	Indianapolis	H. D	Robinson, W. J.	Indianapolis	E. D
Kiskadee, H. S.	Indianapolis	N. R. 10	Roesgen, Jno. P.	Indianapolis	R. D
Kitchen, J. M.	Indianapolis	R. D	Rooker, C. N.	Indianapolis	R. D
Koch, A. J.	Indianapolis	P. M. D	Rooker, J. I.	Castleton	R. D
Krumwine, J. A.	Irvington	R. D	Rowe, L. M.	Indianapolis	R. D
Lewis, J. C.	Indianapolis	N. R. D	Rowley, Wm.	Indianapolis	H. D
Light, Robert C.	Broad Ripple	R. 3	Runnels, O. S.	Indianapolis	H. D
Lockridge, J. E.	Indianapolis	E. D	Rutledge, W. V.	Indianapolis	N. R. D
Long, Henry	Indianapolis	E. D	Schmidt, E.	Indianapolis	R. D
Long, J. B.	Indianapolis	E. D	Seller, T. P.	Indianapolis	R. D
Long, R. W.	Irvington	R. D	Selman, A. J.	Indianapolis	N. R. 10
Loper, F. M.	Indianapolis	R. D	Semple, W. T.	Indianapolis	R. D
Lutz, G. W.	Indianapolis	R. D	Serrin, J. S.	Indianapolis	R. D
Mapes, S. W.	Lawrence	R. D	Sharp, C. C.	Indianapolis	E. D
Manker, F. E.	Indianapolis	R. D	Silvey, H.	Castleton	N. R. 3
Marsee, J. W.	Indianapolis	R. D	Sims, J. T.	Indianapolis	R. D
Martin, Francis	Indianapolis	R. D	Smith, A. J.	Castleton	E. D
Martin, H. H.	Indianapolis	R. D	Snowden, Jesse	N. Indianapolis	R. D
Martin, W. H.	Indianapolis	R. D	Spees, Geo.	Glenn's Valley	R. D
Maxwell, Allison	Indianapolis	R. D	Spicer, J. W.	Acton	R. D
McMurray, A. S.	Indianapolis	R. D	Stein, Fred	Indianapolis	R. D
Mendenhall, A. B.	Indianapolis	R. D	Stewart, L. C.	Indianapolis	E. D
Mendenhall, H. E.	Indianapolis	R. D	Stockton, Sarah	Indianapolis	R. D
Metcalf, C. N.	Indianapolis	R. D	Stillson, J. O.	Indianapolis	R. D
McCabe, H. H.	Indianapolis	E. D	Stone, R. French	Indianapolis	R. D
McClure, C. B.	Indianapolis	R. D	Stratford, Alfred	Indianapolis	R. D
McDonald, W. B.	New Augusta	R. D	Swain, Rachel	Indianapolis	E. D
McGaughey, S.	Acton	R. D	Sutcliffe, J. A.	Indianapolis	R. D
McNutt, W. Y.	Southport	R. D	Taylor, Jas. H.	Indianapolis	R. D
Miller, E. T.	Indianapolis	N. R. 10	Tevis, Joel T.	Indianapolis	R. D
Mills, Seth	Valley Mills	R. 1	Theel, Joseph	Indianapolis	E. D
Minich, J. A.	Indianapolis	N. R. D	Thomas, A. C.	Indianapolis	R. D
Moffett, E. D.	Indianapolis	R. D	Thomas, E. C.	Haughville	R. D
Moffett, N. C.	Indianapolis	E. D	Thomas, W. H.	Indianapolis	R. D
Moore, M. W.	Indianapolis	R. D	Thompson, D. A.	Indianapolis	R. D
Moore, S. H.	Indianapolis	R. D	Thompson, J. L.	Indianapolis	R. D
Moore, Thomas	Indianapolis	N. R. D	Thompson, W. C.	Indianapolis	R. D
Moore, W. G.	Indianapolis	R. D	Tingley, W. S.	Indianapolis	R. D
Monroe, J. A.	Indianapolis	R. D	Todd, L. L.	Indianapolis	R. D
Morgan, W. V.	Julietta	R. D	Tolley, W. V.	Indianapolis	R. D
Morrow, J. E.	Indianapolis	R. D	Vernon, G. W.	Indianapolis	R. D
Morrison, F. A.	Indianapolis	R. D	Vickery, Jas.	Indianapolis	R. D
Mullen Effrench	Indianapolis	R. D	Wagner, T. A.	Indianapolis	R. D
Neff, David	Indianapolis	N. R. 10	Waide, Robt.	Indianapolis	P. M. D
Nesbit, J. A.	Castleton	R. D	Walker, I. C.	Indianapolis	R. D
Noble, Edward	Indianapolis	E. D	Walker, J. B.	Indianapolis	R. D
New, Geo. W.	Indianapolis	R. D	Walker, Jno. C.	Indianapolis	R. D
Newcomer, F. S.	Indianapolis	R. D	Wall, David	Clermont	R. D
Oliver, D. H.	Indianapolis	R. D	Wall, J. S.	Haughville	E. D
Oliver, Jno. H.	Indianapolis	R. D	Walters, P. J.	Haughville	R. D
Painter, Berry	Indianapolis	P. M. D	Wanda, W.	Haughville	R. D
Park, H. A. S.	Indianapolis	E. D	Ward, A. O.	Southport	R. D
Partlow, Jno. W.	Indianapolis	R. D	Waterman, L. D.	Indianapolis	R. D
Parsons, Jno. S.	Indianapolis	N. R. 10	Watson, T. N.	Indianapolis	R. D
Patterson, A. W.	Indianapolis	R. D	Webb, Joshua	Indianapolis	N. R. 10
Pantzer, H. O.	Indianapolis	R. D	Wehrman, E. A.	Indianapolis	H. D
Payne, J. H.	Julietta	R. D	Weiss, Chris G.	Indianapolis	R. D
Peachee, Harrison	Maywood	R. 10	Westhoelter, C. A.	Indianapolis	N. R. 3
Pearson, Chas. D.	Indianapolis	R. D	White, Silas M.	Indianapolis	P. M. D
Perry, Ralph S.	Indianapolis	R. D	Wiley, Delaney	Indianapolis	R. D
Pettjohn, B. O.	Indianapolis	R. D	Williams, R. T.	Indianapolis	N. R. 10
Pfaff, O. G.	Indianapolis	R. D	Williams, J. R.	W. Indianapolis	N. R. 10
Pickrell, G. W.	Indianapolis	E. D	Williamson, J. W.	Indianapolis	E. D
Porter, Edward D.	Indianapolis	R. D	Wishard, W. A.	Indianapolis	R. D
Porter C. N.	Indianapolis	R. D	Wiehard, W. H.	Indianapolis	R. D
Purman, D. M.	Indianapolis	R. D	Wood, Levi.	Indianapolis	P. M. D
Prunk, D. H.	Indianapolis	E. D	Wood, N. S.	Indianapolis	R. D
Ratcliff, Barclay	West Newton	R. D	Wood, C. E.	Haughville	E. D
Reade, Jeremiah	Traders' Point	R. D	Woodward, A. A.	Indianapolis	P. M. D
Record, Samuel	Lawrence	R. D	Woodward, S. G.	Indianapolis	R. D
Reyer, E. C.	Indianapolis	R. D	Woodburn, Jas. H.	Indianapolis	R. D
Reynolds, G. W.	Indianapolis	R. D	Woolen, G. V.	Indianapolis	R. D
Ridpath, H. W.	Indianapolis	R. D	Wright, C. E.	Indianapolis	R. D
Robeson, W. C.	Indianapolis	R. D	Yoke, C.	Bridgeport	R. D
Robbins, Clark	Indianapolis	N. R. 10	Zaring, C. F.	Indianapolis	R. D
Robbins, Wesley	Indianapolis	E. D			

Regular, 209; Eclectic, 37; Physio-Medical, 11; Homeopathic, 12; not reported, 39.



*Marshall County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Babcock, I. L.	Maxinkuckee	R. D	Latham, A.	Ilion	N. R. 10
Baker, Joseph	Plymouth	N. R. 10	Linn, T. T.	Bourbon	R. D
Barton, T. A.	Plymouth	R. 10	Matchett, A. C.	Bourbon	R. D
Bell, John T.	Inwood	R. 10	May, S. A.	Donaldson	E. D
Bower, Isaiah	Plymouth	R. 10	McElrath, M. F.	Plymouth	R. 3
Brooke, J. E.	Plymouth	R. D	Miller, L. E.	Bremen	N. R. 10
Caillat, Victor	Argos	R. 10	Moore, Allen	LaPaz	R. D
Chapman, Clark	Argos	R. 10	Neville, Ralph	Teegarden	R. 10
Denniston, J. M.	LaPaz	R. 10	Oyler, W. A.	Argos	R. 3
Dietrich, W. A.	Bremen	R. D	Peck, M. E.	Bourbon	R. 3
Dicks, Jas. T.	Plymouth	H. D	Pocock, E. H.	Walnut	R. D
Dunlap, E.	Plymouth	H. 10	Rea, Oliver A.	Marmont	R. D
Eaton, R. B.	Argos	R. 10	Richardson, D. R.	Tyner City	H. D
Eidson, J. W.	Bourbon	R. D	Richey, S. R.	Donaldson	R. 10
France, Samuel	Bourbon	R. D	REYNOLDS, G. R.	Plymouth	R. D
Gould, S. W.	Argos	R. D	Spencer, E.	Bourbon	N. R. 10
Hamilton, J. J.	Linkville	R. D	Spencer, Joseph	Ilion	N. R. 10
Herring, N. A.	Bremen	E. D	Sutton, J. A.	Argos	R. 10
Holzeendorf, A. C.	Plymouth	R. D	Viets, E. W.	Plymouth	H. D
Johnson, J. H.	Plymouth	E. 10	Wall, G. F.	Bremen	R. D
Johnson, Luther	Bourbon	R. 10	Wilson, J. H.	Plymouth	R. D
Kiser, Jas.	Walnut	R. 3	Wiseman, B. W.	Marmont	R. D
Knott, D. C.	Burr Oak	E. D	Younkman, A. B.	Bremen	R. D

Regular, 31; Eclectic, 4; Homeopathic, 4; not reported, 7.

*Martin County.*

Brittain, S. H.	Loogootee	R. D	Porter, A. W.	Loogootee	E. D
Campbell, J. C. L.	Loogootee	R. 3	Robinson, G. M.	Loogootee	R. 3
Doss, John A.	Shoals	R. 10	Solomon, J. J.	Shoals	P. M. D
Dollins, T. C.	Trinity Springs	R. 3	Shirley, H. W.	Shoals	R. D
Malott, G. O. F.	Trinity Springs	R. 10	Sims, Jasper N.	Dover Hill	E. 3
McKnab, O. H.	Keek's Church	R. D	Trueblood, J. C.	Loogootee	R. D
McPherson, S. L.	Trinity Springs	R. D	Thomas, W. J.	Keek's Church	R. 10
Plummer, Isaac N.	Shoals	R. D	Walls, G. W.	Shoals	R. D
Plummer, R. S.	Shoals	R. D	WALKER, JAS. K.	Loogootee	R. D

Regular, 15; Eclectic, 2; Physio-Medical, 1.

*Morgan County.*

Banta, William C.	Martinsville	R. 10	Mahornay, John W.	Eminence	R. D
Blackstone, Benj. D.	Martinsville	R. D	Paxton, James C.	Martinsville	R. D
Cure, Hiram W.	Martinsville	R. 10	Perce, Benj. W.	Mooreville	R. D
Farr, U. H.	Martinsville	R. D	Prather, William E.	Mahalsaville	R. 10
Gravi, Charles M.	Martinsville	R. D	Pottorff, William A.	Eminence	R. D
Green, Elijah V.	Martinsville	R. D	Robinson, H. C.	Martinsville	R. D
Green, James L.	Morgantown	R. D	Robbins, Clark	Mooreville	R. 10
Grim, J. G.	Waverly	R. D	Reagan, Amos W.	Mooreville	R. D
Griffith, Ruben C.	Morgantown	R. D	Rundall, S. N.	Cope	R. D
Holladay, Thos. F.	Monrovia	R. D	Shields, William D.	Eminence	R. D
Hendrick, Walter C.	Martinsville	R. D	Stuckey, Thomas E.	Mooreville	R. D
Holman, Charles C.	Hall	R. 3	Seaton, Charles	Martinsville	R. D
Horton, Ellis	Monrovia	R. D	Seaton, Grafton W.	Hall	R. D
Jones, Howard C.	Hall	R. D	Tarlton, Robert C.	Martinsville	R. D
Johnson, Jarvis J.	Martinsville	R. D	Tilford, Salem A.	Martinsville	R. D
KESSINGER, C. A.	Martinsville	R. D	Tilford, Benj. W.	Martinsville	R. D
Kennedy, D. P.	Martinsville	E. D	Thompson, T. L.	Monrovia	R. D
Kennedy, John	Paragon	E. 10	Vansant, W. P.	Brooklyn	R. D
Leathers, D. A.	Mooreville	R. 3	Vincent, Jermiah K.	Waverly	R. D
Lindlay, C. M.	Brooklyn	R. D	Wharton, Jas. O.	Waverly	R. D
McNabb, Philip	Mooreville	R. D	Williamson, R. B.	Paragon	R. D
Moncal, Grant S.	Brooklyn	R. D	Willin, I. C.	Morgantown	R. D
Murphy, William C.	Morgantown	R. D			

Regular, 45; Eclectic, 2.

*Miami County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Alford, Henry . . .	Peru . . .	R. 10	Marsh, S. S. . . .	Peru . . .	R. D
Ager, U. A. . . .	Perrysburg . . .	R. D	Meek, James A. . . .	Bunker Hill . . .	R. D
Armstrong, W. K. . .	Mexico. . . .	R. 3	Maughmer, G. C. . .	Wawpecong . . .	R. D
Armstrong, A. . . .	Miami . . . .	R. 10	McDowell, H. P. . .	Bunker Hill . . .	R. D
Brenton, W. H. . . .	Peru . . . .	R. D	Pence Rollin . . . .	Peru . . . .	R. 10
BLOOMFIELD, E. M. .	Peru . . . .	R. D	Passage, H. V. . . .	Peru . . . .	R. D
Boggs, Milton M. . .	Macy . . . .	R. 10	Pretzinger, J. R. . .	Peru . . . .	E. D
Barnes, John . . . .	Macy . . . .	N. R. 10	Peters, R. J. D. . . .	Macy . . . .	N. R. 10
Belew, John C. . . .	Chili . . . .	E. 10	Rutherford, C. E. . .	Peru . . . .	H. D
Brady, C. C. . . .	Gilead . . . .	R. D	Ramsey, L. G. . . .	Peru . . . .	R. D
Baldwin, J. A. . . .	Amboy . . . .	E. 10	Ross, R. H. . . .	Bennett's Switch .	R. D
Cee, A. D. . . .	Mexico . . . .	R. D	Robbins, J. Q. A. . .	Denver . . . .	R. D
Campbell, E. L. . . .	Miami . . . .	R. 3	Ridenour, David . . .	Chili . . . .	R. D
Davis, L. H. . . .	Miami . . . .	E. D	Smith, R. W. . . .	Xenia . . . .	R. D
Davis, G. W. . . .	Miami . . . .	E. D	Smith, A. F. . . .	Wawpecong . . . .	R. D
Frierhood, E. K. . .	Amboy . . . .	R. D	Stafford, M. A. . . .	Peru . . . .	H. 3
Frets, J. C. . . .	Deedsville . . .	R. 3	Sutton, E. H. . . .	Macy . . . .	R. 10
Graham, B. R. . . .	Peru . . . .	R. D	Spooner, Jared . . .	Peru . . . .	R. D
Gray, A. J. . . .	North Grove . .	R. 3	Stafford, Isabel A. .	Peru . . . .	H. D
Higgins, C. B. . . .	Peru . . . .	R. D	Snook, O. F. . . .	Denver . . . .	N. R. 10
Helm, John H. . . .	Peru . . . .	R. D	Ward, J. O. . . .	Peru . . . .	R. D
Ijams, Thomas F. . .	North Grove . .	R. D	Watkins, F. W. . . .	Peru . . . .	E. 10
Kimball, A. D. . . .	Xenia . . . .	R. D	Wilson, W. T. . . .	Bunker Hill . . .	R. D
Kersey, J. B. . . .	Xenia . . . .	P.-M. 3	Wareham, J. W. . . .	Gilead . . . .	R. 10
LaDue, J. . . .	Denver . . . .	R. 10	Waite, J. C. . . .	Chili . . . .	R. D
Lawshe, J. T. . . .	Wawpecong . . .	R. D	Wilson, J. S. . . .	Macy . . . .	E. 3
Litzenberger, D. P. .	Xenia . . . .	R. 3			

Regular, 39; Eclectic, 7; Homeopathic, 3; not reported, 3.

*Monroe County.*

AXTELL, A. J. . . .	Bloomington . .	R. 10	Judah, Morris T. . .	Harrodsburg. . .	R. —
Bryan, Geo. W. . . .	Bloomington . .	R. D	Lowder, L. T. . . .	Harrodsburg . . .	R. D
Brannan, J. . . .	Bryant's Creek .	R. 10	Maxwell, J. D., Sr. .	Bloomington . . .	R. D
Barrow, David N. . .	Unionville. . . .	R. 3	Maxwell, J. D., Jr. .	Bloomington . . .	R. D
Blackwell, Garrett B.	South Grange . .	E. D	Munsen, George H. .	Ellettsville . . .	R. D
Bennington, John C.	Unionville. . . .	E. 10	McLaughlin, C. D. .	Harrodsburg. . .	R. 10
Dodd, James . . . .	Clear Creek . . .	R. D	McPheeters, J. G., Sr	Bloomington . . .	R. 10
Dodds, James F. . . .	Bloomington . . .	R. 10	Oliphant, Peter F. .	Benna Vista . . .	E. 3
Farr, Alexander C. . .	Bryant's Creek .	R. 3	Presley, Isaac N. . .	Ellettsville . . .	R. D
Gaston, James H. . .	Stanford. . . .	R. D	Rice, Nathan L. . . .	Dudley. . . .	R. D
Harris, John E. . . .	Bloomington . . .	R. D	Simpson, John D. . .	Bloomington . . .	R. D
Harris, Rice C. . . .	Ellettsville . . .	R. 10	Tourner, John P. . .	Bloomington . . .	E. 10
Harris, John J. . . .	Ellettsville . . .	R. 10	Weir, Robt. M. . . .	Bloomington . . .	R. D
Humston, Sam'l R. . .	Smithville. . . .	R. 10	Whitted, Wm. L. . .	Ellettsville . . .	R. D
Judah, Winepark . .	Bloomington . . .	R. 10	Warring, John M. . .	Smithville. . . .	R. 10

Regular, 26; Eclectic, 4.

*Montgomery County.*

Beatty, James L. . . .	New Market . . .	R. D	Detchon, Stow S. . .	New Richmond . .	R. 10
Brown, L. F. . . .	Alamo . . . .	R. D	Detchon, Elliott . .	Crawfordsville . .	R. 3
Berryman, James A. .	Potato Creek . .	R. 10	Duncan, Joseph R. . .	Crawfordsville . .	E. D
Brown, Iral L. . . .	Alamo . . . .	R. D	Drake, Moses C. . . .	Laoga . . . .	R. D
Black, Dayton R. . .	New Richmond . .	R. D	Dunlavy, Ira C. . . .	Waveland . . . .	R. D
Burroughs, Wm. H. . .	Shannonsdale . .	R. 3	Dunnington, Reub. C.	Crawfordsville . .	R. D
Bowers, Homer . . .	New Ross . . . .	R. 3	Davidson, J. F. . . .	Yountsville . . .	R. D
Bronaugh, Charles F. .	New Ross . . . .	R. D	Eddingfield, Geo. W.	Mace . . . .	R. D
Ball, Zopher . . . .	Waveland . . . .	R. D	Etter, Jacob R. . . .	Crawfordsville . .	R. D
Bilbo, John W. . . .	Waveland . . . .	R. 3	Ensminger, Sam'l L.	Crawfordsville . .	R. D
Barnes, Dawson E. . .	Crawfordsville . .	E. D	Ensminger, John A. .	Whitlock . . . .	R. D
COWAN, EDWARD H. .	Crawfordsville . .	R. D	Fitch, A. P. . . .	Waynetown . . .	R. D
Chambers, Wm. B. . .	Crawfordsville . .	H. D	Gott, Wm. T. . . .	Crawfordsville . .	H. D
Culver, Dudley M. . .	Whitesville . . .	R. 10	Griffith, Martha E. H.	Darlington . . .	R. D
Currie, John H. . . .	Darlington . . .	R. 10	Griffith, Thomas J. .	Darlington . . .	R. D
Claypool, Joseph S. . .	Waynetown . . .	N. R. 3	Hutchings, Benj. F. .	Crawfordsville . .	R. D
Detchon, Irwin A. . .	Crawfordsville . .	R. D	Henry, Abijah F. . .	Crawfordsville . .	R. D
Dingman, James O. . .	Linden . . . .	R. D	Hoover, Mary . . . .	Crawfordsville . .	N. R. D
Donaldson, Jos. W. . .	Laoga . . . .	R. D	Hillis, James D. . . .	Darlington . . .	R. B
Dewey, George W. . .	Crawfordsville . .	R. 3	Hurt, Wm. J. . . .	Waynetown . . .	R. D

*Montgomery County—Continued.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Hamilton, Albert N	Waynetown	R. D	Oxley Joseph H	Elmdale	N. R. 10
Huntsinger, Eli	Crawfordsville	E. D	Olinger, David F	Brown's Valley	N. R. 3
Hyten, W. H.	Parkersburg	R. 10	Owsley, William J	Darlington	R. D
Harvey, John W	Russelsville	N. R. 10	Purvi-nee, Sam'l W	Crawfordsville	R. D
Hostetter, Allen H	Mace	R. D	Phillips, Cornelius A	Whitlock	N. R. 10
Holloway, James C	Crawfordsville	H. D	Ristine, Warren H	Crawfordsville	R. D
Irwin, Samuel G	Crawfordsville	R. D	Russell, Joseph P	Waveland	N. R. 10
Jones, Oliver H	Crawfordsville	R. D	Straughan, Kent K	Brown's Valley	R. D
Keegan, Enoch W	Crawfordsville	R. D	Straughan, John W	Parkersburg	R. D
Keen, Daniel P	Crawfordsville	N. R. 10	Shannon, Joseph J	Shannondale	R. 10
Keeney, Henry	Linden	R. 10	Sutherland, James F	Ladoga	R. D
Kleiser, Arthur J	Waveland	R. D	Stoddard, Orren	Linden	R. D
King, Richard F	New Ross	R. D	Smith, John W	Crawfordsville	R. D
Kirkpatrick, Chas. S	Ladoga	R. D	Taylor, John N	Crawfordsville	H. D
Layne, Preston M	Crawfordsville	N. R. 10	Tilney, DeCaux	Crawfordsville	N. R. 10
Lewis, Edwin R	Crawfordsville	R. D	Thornberry, John R	Crawfordsville	R. 10
Montague, Fred T	Crawfordsville	N. R. 10	Talbot, Jesse N	Alamo	R. D
McMechan, James G	Crawfordsville	R. D	Trembley, Daniel G	Mace	E. D
McClelland, Fanny	Crawfordsville	R. 3	Tucker, George W	Darlington	R. 3
McCarty, William T	Ladoga	R. D	Vannuys, John D	Waveland	R. D
May, Willis L	Crawfordsville	R. D	Wilhite, Mary H	Crawfordsville	E. D
Mahorney, John C	Ladoga	H. D	Washburn, Elihu P	Linden	R. D
Moore, Americus V	Whitlock	R. D	Washburn, Doctor M	New Richmond	R. 10
Motter, Thos. S	Crawfordsville	E. 10	Wilson, John B	Ladoga	R. D
McDaniel, Alice		N. R. 10	Walden, Charles H	New Market	R. D
Naylor, I. E. G	Darlington	R. 10	Young, Dudley	New Market	R. 3
Olin, Leverett W	Elmdale	R. D			

Regular, 69; Eclectic, 6; Homeopathic, 4; not reported, 12.

*Newton County.*

Beckner, Jas. F	Kentland	R. D	Kellogg, A. O	Kentland	R. D
Boice, R. B	Kentland	R. D	Pratt, Laura N	Goodland	R. D
Chaffee, J. C. M	Kentland	H. D	Pratt, Benj. W	Goodland	R. D
Combs, M. R	Kentland	R. D	McCain, R. C	Kentland	E. D
Caldwell, S. N	Mt. Ayr	H. D	Recker, L. H	Morocco	R. D
Coppock, Anson	Goodland	R. D	Rainsford, Geo	Lake Village	R. 10
Clymer, Keeve	Goodland	E.	SMITH, G. B	Foresman	R. D
Hatch, J. A	Kentland	R. D	Triplet, C. E	Morocco	R. D
Humston, M. L	Goodland	R. D	Van Duzen, A. J	Kentland	H.

Regular, 13; Homeopathic, 3; Eclectic, 2.

*Noble County.*

Abel, Lem. F	Kendallville	R. 10	Newton, Warren E	Ligonier	H. D
Bowker, James J	La Otto	R. D	Nifer, Frank J	Brimfield	E. D
Buchtel, Mary M	Ligonier	R. 10	Olds, Wm. M. B	Kendallville	E. D
Broughton, Frank	Avilla	R. D	Palmer, Celebron	Ligonier	R. 10
Bartley, R. W	Kendallville	E. D	Ohtwine, Edmond C	Merriam	R. D
Bourie, David P	Ligonier	N. R. 10	Reiff, Nathan G	Albion	H. D
Carr, George W	Ligonier	R. D	Roehrig, Philip J	Avilla	R. D
Denny, John N	Ligonier	N. R. 3	Ruth, Henry	Kendallville	E. 10
DePew, Ezra W	Wolf Lake	R. 10	Shobe, Wm.	Ligonier	R. D
Dunlap, Robert	Kendallville	E. 3	Strawn, Enos R	Rome City	R. D
Ellis, C. F	Ligonier	H. D	Seymour, Calvin	Wawaka	R. D
Knepper, Edwin W	Ligonier	R. 10	Salmon, John C	Green Center	R. D
Forrey Benjamin F	Wawaka	R. D	Shock, Henry W	La Otto	N. R. 10
Franks, William H	Ligonier	R. D	Schlotterback, Eli L	Ligonier	R. 3
GILBERT, JOS. L	Kendallville	R. D	Smith, Jacob F	Rome City	N. R. 10
Gantz, John	Cromwell	E. D	Trader, James L	Brimfield	R. D
Green, Thomas C	Albion	R. D	Tucker, H. G	Cromwell	R. 10
Green, William T	Albion	R. D	Woodruff, Geo. S	Ligonier	E. 10
Hays, John W	Albion	R. D	Williams, Warren S	Kendallville	R. D
Isbell, Philander C	Kendallville	R. 10	Williams, Salathiel T	Kendallville	E. D
Kester, Richard S	Avilla	H. D	Williams, Nathan	Kendallville	E. 10
Lemmon, S. W	Albion	R. D	Wilson, David C	Kendallville	E. D
Mitchell, Wm. K.	Ligonier	R. D	Wyatt, Andrus R	Rome City	P. M. D
Moore, Nathan B	Merriam	R. 3	Williams, Robert B	Rome City	R. 10
Maloney, Frances C	Avilla	R. D	Williams, Robt. B., Jr	Rome City	R. 3

Regular, 33; Eclectic, 10; Homeopathic, 4; Physio-Medical, 1; not reported, 4.

*Ohio County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Alden, Thomas E . . .	Rising Sun . . .	R. 3	Rockafellow, W. A . .	Guionville . . .	R. 3
Craig, Wm. H . . .	Rising Sun . . .	R. 3	Stevenson, Geo. A . .	Rising Sun . . .	R. D
Craig, Samuel W . . .	Rising Sun . . .	R. D	Sullivan, Wm. H . . .	Rising Sun . . .	R. D
GILLESPIE, WM . . .	Rising Sun . . .	R. D	Spaulding, John . . .	Hartford . . .	R. D
Langedale, Robt. G . .	Rising Sun . . .	R. D	Wilson, Nathan H . . .	Guionville . . .	R. 3
Miller, James B . . .	Hartford . . .	R. 10			

Regular, 10.

*Orange County.*

Boyd, Chas. L . . .	Bromer . . .	R. D	Laughlin, E. D . . .	Orleans . . .	R. D
Bowles, L. S . . .	Paoli . . .	R. 10	Lindley, Laban . . .	Paoli . . .	R. D
Baker, Jas . . .	Stamper's Creek . .	R. 10	Lingle, R. W . . .	Orleans . . .	R. D
Brent, Wm . . .	Newton Stewart . .	R. D	May, Geo. W . . .	Orleans . . .	R. D
Carter, T. P . . .	Orangeville . . .	R. D	Montgomery, J. W . .	Valeene . . .	R. D
Ellis, Wm. D . . .	Young's Creek . . .	R. 10	Ritter, John A . . .	Orangeville . . .	R. D
Gilliatt, Wm. B . . .	Young's Creek . . .	R. D	Ritter, Jno. A., Jr . .	West Baden . . .	N. D
Hackney, Wm. R . . .	Orleans . . .	R. 10	Ritter, Thomas B . . .	Orangeville . . .	R. 3
Hon, B. J . . .	Orleans . . .	R. D	Ryan, Samuel . . .	French Lick . . .	R. 10
HON, U. H . . .	Paoli . . .	R. D	Ryan, Wm. E . . .	French Lick . . .	R. D
Hazlewood, Lee . . .	Valeene . . .	R. D	Stroud, E. D . . .	Valeene . . .	N. D
Hazlewood, Green . .	Chambersburg . .	R. D	Still, A. C . . .	Syria . . .	R. D
Hunt, F. P . . .	Leipsic . . .	R. 10	Sherrod, Wm. F . . .	New Prospect . .	R. 3
Kochenour, W. P . .	Rego . . .	R. D	Sherrod, Jas. H . . .	Paoli . . .	R. 10
			Smith, E. A . . .	Newton Stewart .	R. 3

Regular, 27; not reported, 2.

*Owen County.*

Belles, J. T . . .	Spencer . . .	R. D	McKelvy, S. R . . .	Patrickburg . . .	R. D
Bridges, A. T. W . .	Alaska . . .	R. 3	McDonald, D. H . . .	Quincy . . .	R. D
Cox, N. D . . .	Spencer . . .	E. D	Noones, G. H . . .	Arney . . .	R. 10
Coble, Jacob . . .	Spencer . . .	E. D	Osgood, H. G . . .	Gosport . . .	R. D
Fisher, B. F . . .	Quincy . . .	R. D	Pearson, Allen . . .	Spencer . . .	R. D
Gray, O. F . . .	Whitehall . . .	R. D	Richards, S. D . . .	Patrickburg . .	R. 10
Goss, J. M . . .	Freedom . . .	R. D	Rice, W. H . . .	Cuba . . .	R. D
Gantz, Thomas . . .	Freedom . . .	R. 10	Ritter, C. L . . .	Gosport . . .	R. D
Gilbert, Wm. H . . .	Farmer . . .	R. 10	Schell, Walker . . .	Spencer . . .	R. D
Henson, Theodore . .	Alaska . . .	R. D	Smith, John W . . .	Gosport . . .	R. D
Hickom, Wilford . .	Freedom . . .	R. D	Smith, S. E . . .	Gosport . . .	R. D
Hixon, Wm. H . . .	Farmer . . .	R. 10	Stacky, F. V . . .	Gosport . . .	R. D
Hamilton, J. H . . .	Coal City . . .	R. D	Stacky, J. N . . .	Gosport . . .	R. D
Hester, U. V. A . . .	Arney . . .	R. 10	Schell, F. A . . .	Spencer . . .	E. D
Jones, J. M . . .	Catact . . .	R. 10	WILES, WM. V . . .	Spencer . . .	R. D
Livingston, J. J . .	Spencer . . .	E. D	Wiles, Frank M . . .	Spencer . . .	R. D
Mintick, A. J . . .	Freedom . . .	R. 10	Wooden, J . . .	Gosport . . .	R. D
Maddox, W. B. S . .	Vandalia . . .	R. 10	Williams, Jno. A . .	Patrickburg . .	R. 10
McAllister, Alex' der.	Alaska . . .	R. 10	Zook, David I . . .	Clay City . . .	R. D

Regular, 31; Eclectic, 5; not reported, 2.

*Parke County.*

Alvord, Hiram . . .	Rockville . . .	H. D	Harrison, John C . .	Montezuma . . .	N. R. 10
Ball, James T . . .	Judson . . .	R. D	Harvey, Jno. W . . .	Russell's Mills .	R. 10
Black, Robert O . . .	Mansfield . . .	R. D	Johnston, Marian A .	Bridgeeton . . .	R. D
Boyd, James M . . .	Annapolis . . .	R. D	Larue, Benjamin . .	Portland Mills .	R. D
Baldrige, Robert A .	Rosedale . . .	E. D	Leonard, Cerilda . .	Rockville . . .	N. R. 10
Baldrige, John H . .	Rosedale . . .	E. D	Lynch, Joel Y . . .	Rosedale . . .	N. R. D
Caplinger, Charles A .	Marshall . . .	R. 3	McKey, R. H. W . . .	Russell's Mills .	R. 10
Cross, Joseph F . . .	Rockville . . .	R. D	McCune, Geo. W . . .	Montezuma . . .	R. D
Campbell, Annie B . .	Rockville . . .	E. D	Mendnhall, E. W . .	Sylvania . . .	E. 10
Crooks, James . . .	Bridgeeton . . .	E. D	MORRIS, CHAS. C . .	Rockville . . .	R. D
Crooks, Jacob H . . .	Bridgeeton . . .	R. 10	Mater, Jacob D . . .	Bridgeeton . . .	R. D
Crooks, Wm. T . . .	Bridgeeton . . .	N. R. 3	Martin, Alonzo . . .	Bellmore . . .	R. D
Darroach, Wm. P . .	Hollandsburg . .	R. D	Morris, Aaron W . . .	Coloma . . .	R. D
Daly, George P . . .	Rockville . . .	R. D	Myers, John G. L . .	Bloomingsdale .	R. D
Dare, John S . . .	Bloomingsdale . .	R. 10	Powell, Beecher B . .	Marshall . . .	E. D
Devester, George T . .	Howard . . .	R. D	Price, W. S . . .	Catlin . . .	R. 3
Goldsberry, John A .	Annapolis . . .	R. D	Rice, Harrison J . .	Rockville . . .	R. D
Gillum, Wm. H . . .	Rockville . . .	R. D	Rohm, J. Thornton . .	Bellmore . . .	R. D
Garrigus, John J . .	Sylvania . . .	R. 3	Stallard, J. J . . .	Russell's Mills .	R. 10
Goss, Marian . . .	Bellmore . . .	R. D	Thomas, W. D . . .	Rockville . . .	R. D
Hansell, D . . .	Lena . . .	R. 10	Vancleave, Elijah L .	Catlin . . .	R. 3
Hudson, Benj. F . . .	Montezuma . . .	R. D	Williamson, W. N . .	Sylvania . . .	R. D
Holmes, Wm. B . . .	Waterman . . .	N. R. 10	Williamson, Alvin A .	Sylvania . . .	R. 3
Hamilton, Robert S .	Portland Mills . .	R. 10	Welch, John A . . .	Lena . . .	R. D

Regular, 35; Eclectic, 6; Homeopathic, 1; not reported, 6.

*Perry County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Adye, Geo. F . . . .	Troy . . . . .	E. D	Ladd, Chas. W . . . .	Cannelton . . . .	R. D
Allen, Thos. J . . . .	Adyeville . . . .	R. 10	Lomax, Wm . . . . .	Bristow . . . . .	R. D
Brucker, Chas. M. . .	Tell City . . . .	E. D	MITCHELL, F. A . . .	Cannelton . . . .	R. D
Bennett, J. B. . . . .	Derby . . . . .	R. 3	Myers, Joseph . . . .	Rono. . . . .	R. D
Bacon, Jesse D. . . .	Troy . . . . .	R. 10	Meeks, Lewis . . . .	Branchville . . . .	E. 10
Bradshaw, Sam. L. . .	Bristow . . . . .	R. D	Schellhaus, F. W . . .	Tell City . . . . .	H. D
Cassidy, Joseph . . . .	Celina . . . . .	R. 3	Ungrecht, Christ . . .	Tell City . . . . .	N. R. 10
Cluthe, William . . . .	Tell City . . . .	R. D	Wedding, M. F. . . . .	Rome . . . . .	R. D
Cannavan, Jno. W . . .	St. Croix . . . .	R. 3	Webb, J. R. . . . .	Troy . . . . .	E. 3
Gabus, Peter C . . . .	Leopold . . . . .	R. 10	Williams, Jno. A . . .	Lily Dale . . . . .	E. D
Hendrixson, A. M. D. .	Rono . . . . .	R. D	Van Winkle, S. . . . .	German Ridge. . .	R. 10
Lee, Jno. H . . . . .	Rome . . . . .	R. D			

Regular, 16; Eclectic, 5; Homeopathic, 1; not reported, 1.

*Pike County.*

Adams, J. R. . . . .	Petersburg . . . .	R. D	Harris, R. W. . . . .	Delectable Hill . .	R. D
Basinger, T. W. . . .	Oatsville . . . . .	R. D	Ireland, G. L. . . . .	Winslow . . . . .	R. D
Beardsley, J. M. . . .	Winslow . . . . .	R. D	Johnson, L. B . . . .	Otwell . . . . .	R. D
Betchell, W. J. . . . .	Petersburg . . . .	R. 10	KIME, R. R. . . . .	Petersburg . . . .	R. D
Byers, A. R. . . . .	Petersburg . . . .	R. D	Keply, Wm . . . . .	Petersburg . . . .	E. 10
Blackwell, G. B . . . .	Petersburg . . . .	R. D	Lance, Jas. T . . . . .	Spurgeon . . . . .	E. 3
Corn, Nathaniel . . . .	Augusta . . . . .	R. 3	Lamar, I. H. . . . .	Algiers . . . . .	E. D
De Tar, David . . . . .	Winslow . . . . .	R. 3	Leslie, A. L. . . . .	Petersburg . . . .	R. D
Duncan, J. B. . . . .	Petersburg . . . .	R. D	Link, W. H. . . . .	Otwell . . . . .	R. D
Daniels, D. H. . . . .	Otwell . . . . .	R. D	Osborn, Wm. R. . . . .	Spurgeon . . . . .	R. D
Ferguson, J. W. . . . .	Spurgeon . . . . .	R. 10	Palmer, E. H. . . . .	Glezen . . . . .	E. 10
Ferguson, Thomas . . .	Spurgeon . . . . .	H. 3	Pagin, Henry . . . . .	Velpin . . . . .	E. D
Fullinweider, C. H . .	Petersburg . . . .	R. D	Rhonds, A. J. . . . .	Pikeville . . . . .	R. 10
Godwin, J. W. . . . .	Pikeville . . . . .	R. 10	Taylor, J. N. T. . . . .	Velpin . . . . .	R. D
Hornbrook, J. T. . . .	Union . . . . .	R. D	Thomas, M. C . . . . .	Petersburg . . . .	E. 10
Harrington, A. J. . . .	Velpin . . . . .	R. 10	Schenck, H. F. . . . .	Oatsville . . . . .	R. D
Hawkins, John . . . .	Petersburg . . . .	R. D	Smith, J. T. . . . .	Glezen . . . . .	R. 10
Henring, G. G. . . . .	Winslow . . . . .	R. 3	Woodward, L. E. . . .	Winslow . . . . .	R. D
Hillsmyer, L. H. . . .	Stendal . . . . .	R. D	Ward, J. P. . . . .	Union . . . . .	R. D

Regular, 31; Homeopathic, 1; Eclectic, 6.

*Porter County.*

Allen, Charlotte . . . .	Valparaiso . . . .	R. D	Jones, E. J. . . . .	Hageman . . . . .	R. 10
Atkins, Lyman. . . . .	Kout. . . . .	R. D	Kester, Josiah . . . .	Boone Grove . . . .	R. D
Arnold, Geo. W. . . . .	Valparaiso . . . .	R. D	LORING, DAVID J . . .	Valparaiso . . . .	R. D
Blackstone, John K . .	Hebron . . . . .	R. D	Letherman, Andrew P .	Valparaiso . . . .	R. D
Blackstone, J. K., Jr .	Hebron . . . . .	R. D	Miller, Robert E. . . .	Chesterton . . . .	R. D
Blackstone, Wm. B. . .	Hebron . . . . .	R. D	Marr, Delos D . . . . .	Chesterton . . . .	R. D
Beavers, Seth D. . . .	Jackson Center . .	R. D	McCarthy, John F. . . .	Valparaiso . . . .	R. D
Beer, Henry M. . . . .	Valparaiso . . . .	R. D	McClure, Geo. H. . . .	Boone Grove . . . .	R. D
Cattron, Wm. O. . . . .	Valparaiso . . . .	H. D	McKee, Charles . . . .	Kout. . . . .	R. D
Coa es, Hayes C . . . .	Valparaiso . . . .	R. D	Newland, James H. . .	Valparaiso . . . .	R. D
Carson, Joseph C . . .	Hebron . . . . .	R. D	Oakes, Omar M. . . . .	Wheeler . . . . .	R. D
Ellis, Henry I . . . . .	Kout. . . . .	E. D	Pratt, Samuel R. . . . .	Hebron . . . . .	R. D
Edwards, Enos A. . . .	Hebron . . . . .	H. 3	Ryan, John A. . . . .	Valparaiso . . . .	E. D
Green, Hiram . . . . .	Chesterton . . . .	R. 10	Sayles, Marshall F. . .	Valparaiso . . . .	H. 10
Heaton, Chas. E. . . .	Jackson Center . .	R. D	Vincent, Alonzo W . . .	Valparaiso . . . .	E. D
Hubbard, R. B. . . . .	Hebron . . . . .	E. D	Wood, Oliver S. . . . .	Hebron . . . . .	E. D
Huffman, David C . . .	Jackson Center . .	R. D	Yohn, Wm. A . . . . .	Valparaiso . . . .	R. D

Regular, 26; Homeopathic, 2; Eclectic, 6.

*Posey County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Allen, Leroy R. . . . .	Cynthiana. . . . .	E. 3	Huston, J. C. . . . .	Mt. Vernon. . . . .	R. D
Brydon, John F. . . . .	Griffin. . . . .	E. 3	Harper, John. . . . .	Mt. Vernon. . . . .	R. D
Bucklin, Geo. W. . . . .	New Harmony. . . . .	R. D	Hensler, Ernst. . . . .	West Franklin. . . . .	R. 3
Baldwin, W. H. . . . .	Oliver. . . . .	R. D	Henderson, S. C. . . . .	St. Philip. . . . .	R. D
Bitz, L. B. . . . .	Blairsville. . . . .	R. D	Krausgrill, David. . . . .	Wadesville. . . . .	R. D
Brown, J. Edgar. . . . .	Mt. Vernon. . . . .	R. D	Neal, Daniel. . . . .	New Harmony. . . . .	R. 10
Carey, Wm. P. . . . .	Farmersville. . . . .	R. 3	Pearse, S. H. . . . .	Mt. Vernon. . . . .	R. D
Cosby, Lucien. . . . .	Cynthiana. . . . .	R. 3	Peckinpaugh, G. R. . . . .	Mt. Vernon. . . . .	R. D
Creameens, W. C. . . . .	Mt. Vernon. . . . .	E. D	Powell, J. W. . . . .	Mt. Vernon. . . . .	R. 3
Cross, William. . . . .	Griffin. . . . .	R. 10	RAMSEY, D. C. . . . .	Mt. Vernon. . . . .	R. D
Deutsdorff, H. B. . . . .	Parker's Settlement. . . . .	R. 10	Rawlings, S. O. . . . .	New Harmony. . . . .	R. D
Dixon, R. S. . . . .	West Franklin. . . . .	H. 10	Rutledge, J. C. . . . .	Poseyville. . . . .	R. 10
Elliott, Cyrenius, Sr. . . . .	Poseyville. . . . .	R. 10	Rutter, John. . . . .	Cynthiana. . . . .	E. D
Elliott, Cyrenius, Jr. . . . .	Poseyville. . . . .	R. 3	Schultz, O. T. . . . .	Mt. Vernon. . . . .	R. D
Flucke, Carl. . . . .	St. Wendell. . . . .	R. 10	Smyth, Richard. . . . .	Mt. Vernon. . . . .	R. D
Gudgel, James E. . . . .	Cynthiana. . . . .	R. D	Smyth, John. . . . .	Blairsville. . . . .	R. D
Goodwin, E. J. . . . .	Solitude. . . . .	R. D	Spencer, E. V. . . . .	Mt. Vernon. . . . .	R. D
Glaze, Alonzo L. . . . .	Stewartsville. . . . .	R. D	Smith, Wm. F. . . . .	Cynthiana. . . . .	E. 3
Gunn, M. V. . . . .	Poseyville. . . . .	R. D	Williams, Jos. B. . . . .	Grafton. . . . .	R. D
Gettings, C. C. . . . .	Grafton. . . . .	R. 10	Welborn, Geo. W. . . . .	Stewartsville. . . . .	R. D
Holton, W. M. . . . .	New Harmony. . . . .	R. D	Welch, Walter. . . . .	Farmersville. . . . .	R. D
Hicks, C. . . . .	Caborns. . . . .	R. D	Young, Thos. B. . . . .	Poseyville. . . . .	R. D

Regular, 38; Eclectic, 5; Homeopathic, 1.

*Pulaski County.*

Brown, Stephen I. . . . .	Francesville. . . . .	R. D	Noland, Jas. F. . . . .	Pulaski. . . . .	R. D
Buck, Felix. . . . .	Oak. . . . .	R. 3	Osborn, James. . . . .	Star City. . . . .	R. 10
Huston, Chas. N. . . . .	Pulaski. . . . .	R. 3	Pattison, H. E. . . . .	Winamac. . . . .	R. D
Hunt, Z. P. . . . .	Medaryville. . . . .	R. 10	Rannels, W. S. . . . .	Monterey. . . . .	R. D
Huey, Robert B. . . . .	Star City. . . . .	R. D	Sharer, John C. . . . .	Francesville. . . . .	R. D
Hovions, R. D. . . . .	Francesville. . . . .	R. D	Stevens, Henry C. . . . .	Star City. . . . .	P. M. D
Jones, H. G. . . . .	Medaryville. . . . .	R. D	Stevens, Abram E. . . . .	Monterey. . . . .	R. 10
Kettinger, Henry. . . . .	Winamac. . . . .	R. D	Thompson, G. W. . . . .	Winamac. . . . .	R. D
Kelsey, William. . . . .	Monterey. . . . .	R. D	Thomas, F. B. . . . .	Winamac. . . . .	R. 10
Kidd, Walter J. . . . .	Medaryville. . . . .	E. D	THOMAS, JOHN J. . . . .	Winamac. . . . .	R. 3
McCandless, Adam S. . . . .	Medaryville. . . . .	R. D	Thompson, W. H. . . . .	Winamac. . . . .	R. D
McPherson, Chas. F. . . . .	Pulaski. . . . .	R. D	Wright, W. G. . . . .	Winamac. . . . .	R. 10
Mass, D. F. . . . .	Winamac. . . . .	R. D			

Regular, 23; Physio-Medical, 1; Eclectic, 1.

*Putnam County.*

Allen, C. A. . . . .	New Maysville. . . . .	R. 3	Morrow, L. B. . . . .	Greencastle. . . . .	R. D
Batman, Wm. F. . . . .	Roachdale. . . . .	R. D	Moore, Alex. H. . . . .	Morton. . . . .	R. D
BENCE, GEO. W. . . . .	Greencastle. . . . .	R. D	McCandless, Adam S. . . . .	Barnard. . . . .	R. D
Cully, Jno. F. . . . .	Bainbridge. . . . .	R. D	Newgent, R. P. . . . .	Morton. . . . .	R. 10
Cross, Joseph B. . . . .	Bainbridge. . . . .	R. D	Prichard, W. K. . . . .	Cloverdale. . . . .	R. D
Cooper, Joel. . . . .	Greencastle. . . . .	H. D	Pitchlynn, H. R. . . . .	Greencastle. . . . .	R. 10
De Vore, Henry V. . . . .	Greencastle. . . . .	R. D	Preston, J. L. . . . .	Cloverdale. . . . .	R. D
Denny, Robert. . . . .	Fillmore. . . . .	R. 10	Preston, Abe L. . . . .	Fillmore. . . . .	R. D
Evans, Ezra B. . . . .	Greencastle. . . . .	R. D	Preston, A. G. . . . .	Greencastle. . . . .	R. D
Fisher, Samuel. . . . .	Greencastle. . . . .	R. D	Purcell, W. M. . . . .	Reelsville. . . . .	R. D
Farver, Geo. W. . . . .	Bainbridge. . . . .	R. D	Prichard, Louis. . . . .	Cloverdale. . . . .	E. D
Farris, Esom G. . . . .	Clinton Falls. . . . .	R. D	Robinson, Josiah H. . . . .	Fillmore. . . . .	R. D
Fulton, Richard E. . . . .	Bainbridge. . . . .	N. R. 10	Rogers, Dudley. . . . .	Greencastle. . . . .	R. D
Grimes, J. B. . . . .	Mt. Meridian. . . . .	N. R. 10	Smythe, G. C. . . . .	Greencastle. . . . .	R. D
Hanna, Levi M. . . . .	Greencastle. . . . .	R. D	Stockwell, G. W. . . . .	Reelsville. . . . .	R. D
Hopwood, Wm. C. . . . .	Greencastle. . . . .	R. D	Stanley, Logan. . . . .	Fincastle. . . . .	R. D
Harris, Wm. C. . . . .	Carpentersville. . . . .	R. D	Slavens, John. . . . .	Brick Chapel. . . . .	R. D
Hill, Wm. D. . . . .	Greencastle. . . . .	H. 10	Spurgeon, Franklin. . . . .	Mt. Meridian. . . . .	R. D
Horn, Amos. . . . .	Putnamville. . . . .	R. D	Smythe, R. E. . . . .	Fillmore. . . . .	R. D
Hawkins, Eugene. . . . .	Belle Union. . . . .	R. D	Taylor, Mary J. . . . .	Greencastle. . . . .	H. D
Knight, Jno. M. . . . .	Greencastle. . . . .	E. D	Taylor, G. W. . . . .	Greencastle. . . . .	H. 10
Leatherman, Jno. R. . . . .	Manhattan. . . . .	R. D	Trusley, B. A. . . . .	Darter. . . . .	R. 3
Layman, D. W. . . . .	Putnamville. . . . .	N. R. 10	Walker, W. O. . . . .	Bainbridge. . . . .	R. D
Morrison, Jno. F. . . . .	Greencastle. . . . .	R. D	Wood, N. S. . . . .	Groveland. . . . .	R. D
Mullinix, P. . . . .	Cloverdale. . . . .	R. 3			

Regular, 40; Homeopathic, 4; Eclectic, 2; not reported, 3.

*Randolph County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Alexander, Mrs. P. B.	Winchester	P.-M. 10	Hamilton, R.	Lynn	R. 10
Alexander, R. P.	Winchester	P.-M. 10	King, James V.	Castle	R. 10
Bailey, Elisha T.	Ridgeville	R. D.	Keener, James M.	Farmland	R. 10
Ballard, Amos B.	Deerfield	R. D.	Kendall, James P.	Losantville	R. 10
Berry, John S.	Spartansburg	R. D.	Knapp, Albert R.	Ridgeville	P.-M. 10
Blair, James S.	Lynn	R. D.	Lawrence, M. H.	Union City	R. D.
Bosworth, Richard	Winchester	R. D.	Markle, John Edgar	Winchester	R. D.
Bruce, George W.	Winchester	R. 10	Marquis, William K.	Bartonia	E. 10
Botkin, John W.	Unionport	E. 10	Meek, Joseph	Arba	R. 10
Botkin, Thomas W.	Unionport	W. 3	Martin, J. Charles	Union City	R. D.
Carter, David M.	Modoc	R. D.	Moroney, James H.	Carlos City	R. D.
Cox, Cyrus	Lynn	R. D.	McFarland, Norman	New Pittsburg	E. 10
Carver, James M.	Winchester	R. 10	Nixon, John	Farmland	R. D.
CHENOWETH, JOHN T.	Winchester	R. D.	Owens, John K.	Harrisville	R. 3
Chenoweth, Nelson T.	Windsor	R. D.	Purcell, John	Randolph	R. D.
Chenoweth, Forrest A.	Winchester	R. D.	Proctor, J. A.	Union City	P.-M. 10
Commons, William	Union City	R. D.	Rogers, Aaron G.	Parker	R. D.
Coggsheill, William R.	Carlos City	E. 10	Reynard, Granville	Union City	R. D.
Davis, Lewis N.	Farmland	R. D.	Ruby, Samuel B.	Union City	R. 3
Evans, C. S.	Union City	R. D.	Read, H. G.		R. D.
Evans, George S.	Saratoga	R. 10	Reeves, John L.	Union City	E. D.
Evans, Joseph J.	Winchester	R. 10	Rickard, William A.	New Pittsburg	E. D.
Farquhar, Allen H.	Ridgeville	R. D.	Rickard, Claudia A.	New Pittsburg	E. D.
Fager, C. M.	Fairview	R. 10	Rommel, Sylvia	Winchester	P.-M. 10
Franks, H. P.	Losantville	R. D.	Smith, William G.	Farmland	R. D.
Frederich, George W.	Ridgeville	R. D.	Smith, Calvin	Farmland	E. D.
Frazier, John W.	Union City	P.-M. 10	Shoemaker, Wm. J.	Ridgeville	R. 10
Gustin, Francis M.	Union City	H. D.	Thompson, Geo. W.	Union City	E. D.
Huddleston, Albert F.	Winchester	H. D.	Thompson, Val	Union City	E. 10
Harrison, Harlan	Union City	R. D.	Trent, Isaac N.	Losantville	R. D.
Hammon, E. W.	Union City	E. 3	Tisor, William R.	Rural	R. 10
Hetzler, William W.	Arba	R. D.	Welbourne, Edward L.	Union City	E. D.
Hunt, H. C.	Trenton	R. 3	White, James K.	Union City	R. D.
Hunt, Pleasant	Farmland	E. 10	White, L. E.	Spartansburg	P.-M. 10
Heiner, John	Arba	R. D.	Yockey, David H.	Harrisville	R. 3
Hiatt, John A.	Ridgeville	E. D.	Yergin, H. H.	Union City	R. D.
Hiatt, C. C.	Winchester	E. D.			

Regular, 48; Eclectic, 16; Physio-Medical, 7; Homeopathic, 2.

*Ripley County.*

Abbott, June	Milan	E. D.	Lamb, James F.	Cross Plains	E. 10
Abbott, Mario	Milan	E. D.	Miller, A. G.	Elrod	E. D.
ANDERSON, JAS.	Versailles	R. D.	Miller, R. H.	Cross Plains	R. D.
Brenton, John T.	Osgood	R. D.	Newforth, Christian	Sunman	R. D.
Brown, Chas. M.	New Marion	R. D.	Olmstead, R. T.	Rexville	R. D.
Cass, C. H.	Holton	R. D.	Parsons, Geo. E.	Rei	E. D.
Clark, Freeman	Rei	R. D.	Radlon, Dan'l M.	Pierceville	E. 3
Davis, Jas. R.	Morris	R. D.	Rodgers, E. D.	Milan	R. 3
Firsch, Michael	Batesville	N. R. —	Roberts, Jeremiah	Holton	R. 3
Freeland, John P.	Sunman	R. D.	Robinson, Jno. M.	Versailles	R. D.
Freeman, Edw. D.	Osgood	R. D.	Schloesser, G. F.	Batesville	E. 10
Hess, Jno. N.	New Marion	R. D.	Sweeney, John M.	Cross Plains	E. 10
Hicks, Jno. C.	Napoleon	P.-M. 10	Townsend, S. B.	Poston	R. D.
Holbert, W. M.	Elrod	R. D.	Vincent, E. B.	Sunman	R. D.
Jerman, L. W.	Batesville	R. D.	Young, R. W.	Milan	R. 10
Jones, J. G.	Versailles	R. D.	Zitke, Joseph	Batesville	R. D.
Joseph, A. F.	Napoleon	R. D.			

Regular, 25; Eclectic, 6; Physio-Medical, 1; not reported, 1.

*Rush County.*

Arnold, Jno	Rushville	R. D.	Cox, Wm. B.		R. D.
Arnold, Wm. W.	Rushville	R. D.	Dillon, J. C.	Occident	R. D.
Axline, J. A.	Raleigh	R. D.	Drake, F. G.		R. D.
Becker, E. H.	Rushville	E. D.	Draper, J. I.		R. 10
Bogart, H. J.	Carthage	R. 10	Ellis, E. W.	Falmouth	P.-M. 10
Bruner, M. L.	Carthage	R. D.	Elliott, W. H.	Greenwood	R. 3
Braun, W. E.		R. D.	Gordon, W. B.	Manilla	R. 3
Crippen, E. H.	Moscow	R. D.	Gilbert, C. H.	Rushville	H. D.

*Rush County—Continued.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Green, J. W.	Arlington	R. D	Orr, Jas. P.	Glenwood	R. D
Green, Jas. C.	Arlington	R. D	Pugh, W. A.	Rushville	R. D
Green, Lot	Occident	R. D	Parsons, C. H.	Rushville	R. D
Graham, A. W.	Richland	R. 10	Powell, Elmer M.	Sexton	R. D
Glass, T. F.	Arlington	R. 3	Pollitt, F. M.	Milroy	R. 10
Hargrove, W. S.	New Salem	R. D	Ross, Lander G.	Raleigh	N. R. 10
Hackleman, F. G.	Rushville	R. D	Rucker, Thos. H.	Arlington	R. 10
Hubbard, Wm. H.	Manilla	E. D	Rogers, W. R.	Milroy	R. 3
Irvin, Jno. F.		R. D	Redding, Jacob	Carthage	R. D
Johnston, W. A.	Raleigh	E. D	Riley, S. H.	Milroy	E. D
King, Frank B.	Homor	R. D	Sexton, Marshall	Rushville	R. D
Leech, E. W.	Manilla	R. 10	Sexton, John C.	Rushville	R. D
Linn, H. G.	Rushville	H. D	SMITH, WM. H.	Rushville	R. D
Megee, W. W.	Occident	R. D	Spurrer, Jno. H.	Rushville	R. D
Megee, Omar	Rushville	R. D	Sparks, Jas. B.	Carthage	R. D
McMahan, S. W.	Rushville	R. D	Tevis, Jas. L.	Moscow	R. 10
McGaughey, Jno.	Arlington	R. D	Thomas, Sam'l C.	Milroy	E. D
Moffette, Jno.	Rushville	R. D	Welliver, Jas. E.	Rushville	H. D
Newby, Oliver	Carthage	R. D	Wright, Geo.	Sexton	R. D
Newlin, S. C.	New Salem	R. D			

Regular, 44; Eclectic, 5; Homeopathic, 3; Physio-Medical, 1; not reported, 1.

*Scott County.*

Blocher, J. B.	Holman Station	R. D	Moser, Jno.	Vienna	R. D
Casey, H. R.	Austin	R. D	Paswater, John G.	Lexington	R. D
Davis, Solomon	Lexington	R. D	Rovers, Sion M.	Austin	R. 10
Green, E. R.	Lexington	E. D	SMITH, MILTON W.	Scottsburg	R. D
Houglard, M. E.	Vienna	R. 10	Watson, John M.	Scottsburg	R. D
Latorp, A. H.	Lexington	R. D	Warmeth, George W.	Scottsburg	R. D

Regular, 11; Eclectic, 1.

*Shelby County.*

Adams, J. M.	Noah	R. 10	Maddox, J. F.	Shelbyville	E. D
Baylor, W. R.	Waldron	E. 10	McCray, R. S.	Morristown	R. D
Bowly, Jos.	Noah	R. D	Perry, Jo'n	Shelbyville	R. D
Bentley, W. R.	Morristown	H. D	Parrish, J. W.	Shelbyville	E. D
Comstock, J. A.	Marietta	R. D	Pettigrew, D. H. A.	Flat Rock	R. D
Comstock, Hiram	Smithland	R. D	Pierson, W. M.	Fountaintown	R. D
Connelly, H. M.	Flat Rock	R. D	Posz, Margaret	Shelbyville	N. R. 10
Crippen, E. H.	Blue Ridge	R. 10	Raynes, R. D.	Lewis Creek	R. 10
Coleman, Emma E.	Shelbyville	E. D	Robins, J. P.	Shelbyville	R. D
Drake, M.	Shelbyville	R. D	Rubin, T. R.	London	R. D
Drake, I. H.	Shelbyville	R. D	Shrout, W. R.	Ray's Crossing	E. D
Diekman, F.	Shelbyville	H. 10	Saulsbury, Samuel	Morristown	E. 10
Floyd, R. M.	Shelbyville	R. 10	Snider, J. W.	Fairland	R. D
Ford, W. M.	Mt. Auburn	R. D	Stewart, J. K.	Fairland	R. D
Fleming, Geo. W.	Shelbyville	R. D	Smith, H.	Smithland	R. 10
Green, Jas. W.	Shelbyville	R. D	Strickler, S. L.	Boggs town	E. D
Gilmore, M. R.	Boggs town	R. D	Sanford, J. H.	Shelbyville	R. 3
Inlow, I. W.	Blue Ridge	R. 10	Selman, J. W.	Shelbyville	R. D
Inlow, J. E.	Shelbyville	R. 10	Stewart, J. B.	Marietta	N. R. 10
Jenkins, J. R.	Waldron	R. D	Stackhouse, Urbine	Morristown	R. D
Jones, T. S.	Flat Rock	R. D	Taylor, J. F.	Sulphur Hill	R. D
Kennedy, S. A.	Wintertown	R. 3	Trees, I. W.	Smithland	R. D
Kennedy, S. A.	Shelbyville	R. D	Washburn, R. R.	Waldron	R. 10
KENNEDY, T. C.	Shelbyville	R. D	Winters, G. G.	Shelbyville	H. 10
Keeling, W. W.	Sulphur Hill	E. D	Wintzel, F. E.	Morristown	R. D
Knapp, W. T.	Shelbyville	H. D	Wolf, J. G.	Morristown	R. D
Lucas, J. N.	Shelbyville	H. D	Wray, Hardy	London	E. 10
McFadden, W. G.	Shelbyville	R. D	Wells, E. F.	Shelbyville	R. D

Regular, 40; Eclectic, 8; Homeopathic, 5; not reported, 2.



*Spencer County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Ambrose, H. L.	Rockport	R. D	Johnson, T. J.	Dale	R. D
Anderson, E. M.	Huff	R. D	Johnston, E. L.	Lake	R. D
Austin, T. R.	Chrisney	E. D	James, J. B.	Newtonville	E. 10
Bean, A. M.	Newtonville	E. D	Killian, J. L.	Eureka	R. 10
Bryant, J. B.	Gentryville	R. 3	Lucas, L. B.	Kercheval	E. D
Bryant, W. S.	Dale	R. D	Lang, J. W.	Rockport	R. 10
Bryant, J. H.	Gentryville	R. 10	Littlepage, S. B.	Rockport	R. D
Billart, F. W.	Chrisney	R. 10	Lee, H. A.	Newtonville	R. D
Butler, J. M.	Huff	R. D	Lamar, I. H.	Fuldar	E. D
Beeler, W. R.	Rockport	R. D	Milner, I. L.	Rockport	R. D
Camp, W. F.	Buffaloville	E. 3	Medcalf, A. F.	Dale	R. 10
Dailey, J. M.	Rockport	R. D	Myler, J. M.	Eureka	R. D
Dyer, A. S.	Huffman	R. 3	Malowsky, F.	Mariah Hill	R. D
Ehrman, E. D.	Rockport	H. 3	McCoy, L. H.	Lake	R. D
Evans, F. A.	Oakland	E. 10	McCoy, G. W.	Chrisney	R. D
Gengelback, E. E.	St. Meinrad	E. D	McKassen, J. W.	Gentryville	E. 10
HACKLEMAN, F. M.	Rockport	E. D	Remhard, E. W.	Dale	R. D
Harrison, E. P.	Patronville	E. 10	Schweitzer, J. J.	Santa Clause	R. 3
Hartley, H. H.	Eureka	R. D	Turpin, James	Rockport	E. D
Hammond, D. M.	Grandview	R. D	White, Arthur	Rockport	R. D
Hunter, S. W.	Rockport	R. 3	Worseley, George	Grandview	R. D
Harrison, J. A.	Pigeon	R. 10	Wright, Thomas	Midway	R. D
John, B. B.	Newtonville	E. 10	Williams, W. H.	Gentryville	E. D
Jones, W. M.	Gentryville	R. D	White, J. T.	Grandview	R. 3
Jolly, J. C.	Lake	R. D	Wilson, A.	Huff	R. 10

Regular, 34; Eclectic, 15; Homeopathic, 1.

*Starke County.*

Abner, John R.	Grovertown	P.-M. D	Henderson, A. H.	Knox	E. 10
Bonar, M. C.	Knox	R. 3	Hunt, Zachariah	Ora	E. 10
BONAR, S. S.	Knox	R. 10	Perry, Wm	North Judson	R. 10
Conner, L. E.	Knox	R. 10	Sinclair, Isaac P.	Knox	R. D
Dunfee, Joseph.	Knox	P.-M. D	Wright, Mark R.	Knox	E. 10
Garner, Henry	Knox	R. 10			

Regular, 6; Eclectic, 3; Physio-Medical, 2.

*Steuben County.*

Abbott, Lymon.	Fremont.	R. D	Leas, E. R.	Angola	H. 10
Bowen, M. M.	Flint.	R. D	Mitchell, D. G.	Ray	R. D
Biery, T. E.	Pleasant Lake	R. D	McNabb, T. B.	Fremont.	R. D
Brown, Anson R.		E. D	Ransburg, M. V.	Salem Center	R. D
Brown, N. E. D.	Hamilton	R. 3	Schofield, Samuel	Hamilton	R. 10
Cameron, J. F.	Hamilton	R. D	Sanborn, J. P.	Fremont.	H. D
Clay, M. F.	Salem Center	R. D	Shaw, M. F.	Angola	R. D
Fuller, S. H.	Pleasant Lake	R. D	Taylor, E. A.	York Center.	R. D
Fierstone, J. L.	Salem Center	R. D	Wright, G. H.	Angola	H. D
Fenton, D. W.	Fremont.	R. D	Wilkinson, J. J.	Orland.	R. 10
Goodale, C. W.	Metz.	R. D	Weicht, W. C.	Angola	H. 10
Haggerty, J. L.	Fremont.	R. D	Wood, T. F.	Metz.	R. D
Hathaway, Albert	Nettle Lake	R. D	WOOD, H. D.	Angola	R. D
Henderson, N. U.		N. R. D	Waller, W. H.	Angola	R. D
Hamilton, F. C.	Hudson	R. 3	Wallace, James F.	Orland.	R. D
Kirmel, A. J.	Hudson	R. D	Williams, T. B.	Angola	R. D
Kimsey, J. C.	Salem Center	R. 10	Wood, Sol. A.	Angola	R. D
Keesler, George	Orland.	R. 10			

Regular, 28; Eclectic, 1; Homeopathic, 4; not reported, 2.

*St. Joseph County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Applegate, Charles H	South Bend	R. D	Manchester, H. D	South Bend	H. D
Armintroul, John C	South Bend	R. D	Maurer, John	South Bend	N. R. 10
Arlington, James W	Walkerton	R. D	Moore, Charles W	Walkerton	R. D
Ayer, Winslow I	South Bend	E. D	Miller, Martin	New Carlisle	H. D
Albaugh, Abie B		E. D	McDonald, Thomas T	New Carlisle	N. R. 10
Borough, John	Mishawaka	H. D	Massey, T. F	New Carlisle	E. D
Brown, Jacob R	South Bend	N. R. 10	Miller, Allen G	South Bend	N. R. 3
Butterworth, Wm. W	Mishawaka	R. —	McGill, John A	South Bend	H. D
Campbell, A. S	North Liberty	N. R. 10	McAlister, Elbert W	South Bend	K. D
Cassidy, John	South Bend	R. D	McCool, Amos W	Walkerton	N. R. 10
Carpender, George W	South Bend	R. D	McDonald, D. H. C		R. D
Church, Isaac W	Walkerton	R. D	Norton, Daniel H	South Bend	N. R. 10
Dunning, Lehman H	South Bend	R. D	O'Connor, Joseph	North Liberty	N. R. 10
Daugherty, Charles A	South Bend	N. R. D	Osborne, Margaret		N. R. 10
Drollinger, Erastus A	South Bend	E. D	Pierce, William A	Osceola	N. R. 3
Davis, Jeremiah H	New Carlisle	R. D	Partridge, Joel M	South Bend	H. D
Dayton, Daniel	South Bend	R. D	Pagin, Lewis	South Bend	R. 10
Endley, James F	Walkerton	E. D	Rupp, P. E	South Bend	N. R. 10
Eliel, Leopold	South Bend	N. R. 10	Richmond, Charles M	Walkerton	R. D
Fast, Emmitt E	Lakeville	R. D	Starr, Elmer Geo.	South Bend	R. D
Fink, Henry A	Woodland	N. R. 3	SAWYER, FRANK F	South Bend	R. D
Freemyer, George L	Granger	R. D	Sack, Jacob C	South Bend	R. D
Grimes, James B	Mishawaka	N. R. 10	Stockwell, Sarah F	South Bend	R. D
Grimes, James F	Mishawaka	N. R. 10	Sherry, Geo. E	Mishawaka	R. D
Grimes, John H	Mishawaka	E. D	Slominski, Stanislaus	South Bend	H. D
Hitchcock, William W	South Bend	R. D	Shaefer, George J	North Liberty	N. R. 10
Hunsenger, Abraham	Mishawaka	E. D	Szymauski, Felix	South Bend	R. D
Harris, Robert	South Bend	N. R. 10	Snyder, O. W. F		—
Harris, Joel	New Carlisle	N. R. 10	Thorpe, Baron C	Mishawaka	N. R
Hanford, Wm. H	South Bend	N. R. 10	Tutton, Henry V	Mishawaka	R. D
Inks, John S		R. —	Varier, James A	North Liberty	R. D
Kilmer, Samuel L	South Bend	R. D	Van Pelt, Ryan T	Mishawaka	R. D
Kettring, Joshua A	South Bend	R. D	Van Ryper, A. N	New Carlisle	E. D
Loring, Samuel C	Walkerton	R. D	Ulery, S. H		N. R. 10
Myers, Cornelius H	South Bend	H. D	Wickham, W. A. R	South Bend	R. D
Montgomery, Hugh T	South Bend	R. D	Woodworth, Henry A	Walkerton	N. R. 3
Moore, John	Lakeville	N. R. 10	Wells, William H		N. R. —
Moore, Robert	Lakeville	N. R. 10			

Regular, 36; Eclectic, 8; Homeopathic, 6; not reported, 27.

*Sullivan County.*

Bedwell, T. S.	Sullivan	R. D	Mathews, J. M.	Carlisle	R. D
Bennett, J. H.	Farmersburg	E. D	Mayfield, T. B	Pleasantville	R. D
Bridwell, Lafayette	Dugger	N. R. D	McDowell, J.	Pleasantville	R. 10
Briggs, C. F	Sullivan	R. D	Murphy, A. D	Sullivan	R. 3
Brown, N. S	Buell	R. 10	Murphy, A. M	Sullivan	R. D
Buskirk, J. S	Shellburn	R. 10	Murphy, J. S	Sullivan	R. 3
Cavins, R. W	Sullivan	R. D	Nebergall, J. W	Burchard	R. 10
Crowder, R. H	Sullivan	R. D	Osborn, S. D	Shellburn	R. D
Crowley, J. B	Sullivan	E. D	Peyton, H. H	Paxton	E. D
Cushman, A	Graysville	R. D	Phillips, J. L	Sullivan	R. 3
Daily, T. L	Paxton	R. 3	Plew, G. F	Pittsburg	R. D
Delashmut, V. E	Shellburn	R. D	Robbins, W. M	Sullivan	R. D
Denison, E. D	Carlisle	R. 10	Saunders, J. F	Sullivan	R. 3
Durham, J. L	Graysville	R. D	Sharpless, M. F	Sullivan	R. D
Freeman, J	Sullivan	R. D	Sharpless, H	Fairbanks	R. D
Flemming, W. A	Pleasantville	R. 3	Stone, W. O	Fairbanks	R. D
Harper, H. F	Merom	R. D	Thompson, J. J	Sullivan	R. 3
Harper, J. A	Merom	R. 3	Thralls, R. T	Pittsburg	R. D
Harper, J. B	Shellburn	R. 10	Troxell, S. P	Paxton	H. D
HIGBEE, G. W	Sullivan	R. D	VanCleve, R. H		R. D
Higbee, J. L	Sullivan	H. D	Walters, J. A	Paxton	R. D
Jenkins, R. L	Carlisle	R. 3	Wier, S. D	Sullivan	R. 10
Lowder, C. M	Dugger	R. D	Whalen, R. M	Carlisle	R. 10
Mason, T. A	New Lebanon	R. D	Young, J. N	Carlisle	R. D

Regular, 42; Eclectic, 3; Homeopathic, 2; not reported, 1.

*Switzerland County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Cheever, E. M. . . . .	Quercus Grove	R. 10	Olcott, A. W. . . . .	Patriot	R. D
CRAIG, ALBERT G. . . .	Vevay	R. D	Rous, H. C. . . . .	Vevay	R. D
Culbertson, Scott. . . .	Moorefield.	R. D	Sage, P. S. . . . .	Vevay	R. 3
Dalyleish, H. T. . . . .	Vevay	R. D	Searcy, Hugh . . . . .		E.
Elfers, Jn. . . . .	Sugar Branch	R. D	Shadday, J. H. . . . .	Vevay	R. D
Freeman, Wm . . . . .	Vevay	R. D	Simpson, R. G. . . . .	Bennington	R. D
Griffith, T. J. . . . .	Vevay	R. D	Smith, J. W. . . . .	Vevay	H. D
Griffith, A. J. . . . .	Mt. Sterling.	R. D	Vanosdol, C. L. . . . .	Allensville	R. D
Haydon, D. N. . . . .	Mt. Sterling.	R. D	Vanosdol, J. W. . . . .	Allensville	R. D
Jameson, J. A. . . . .	Patriot	R. D	Van Peet, G. W. . . . .	Vevay	R. D
Lansdale, J. W. . . . .	Florence.	R. D	Waltham, Wm . . . . .	Moorefield.	R. D
McMillen, Wm . . . . .	Sugar Branch	R. 10			

Regular, 21; Homeopathic, 1; Eclectic, 1.

*Tippecanoe County.*

Ayer, I. W. . . . .	E. D	Keller, M. E. . . . .	Lafayette	H. D
Ackerman, August. . . .	Lafayette	Kelly, D. M. . . . .	Lafayette	R. D
Boyd, Benj. H. . . . .	Lafayette	Koonse, J. B. . . . .	Lafayette	R. 10
Beasley, George F. . . .	Lafayette	Laboree, William . . . .	Clark's Hill	R. D
Baker, Joseph H. . . . .	Stockwell	Littell, J. V. . . . .	N. R. 10	
Baker, Moses . . . . .	Stockwell	Moffitt, Wm. R. . . . .	Lafayette	R. 10
Bates, Samuel L. . . . .	Lafayette	Moffitt, Reuben R. . . .	Lafayette	R. 10
Burns, G. W. . . . .	Lafayette	McDaniels, Alice. . . .	Stockwell	N. R. 10
Baugh, Sam'l L. . . . .	Farmer's Inst'te	McKinsey, William . . . .	Lafayette	N. R. 10
Berryman, James . . . .	Lafayette	Orth, Wm. M. . . . .	Lafayette	R. D
Brown, William W. . . .	Buck Creek	Ogborn, Job . . . . .	Buck Creek	N. R. 10
Brown, L. L. . . . .	Stockwell	Osborn, Geo. A. . . . .	Lafayette	R. D
Burke, W. A. . . . .	Lafayette	O'Terrall, R. M. . . . .	Lafayette	R. D
Campbell, Wm. S. . . . .	Lafayette	O'Terrall, Frank. . . . .	Lafayette	R. D
Charles, Robt. E. . . . .	West Point	Potel, Christian . . . . .	Lafayette	R. D
Coblentz, Jacob W. . . .	Lafayette	Perkins, E. E. . . . .	Lafayette	E. D
Comstock, Henry W. . . .	Lafayette	Paul, Phillip D. . . . .	Lafayette	H. 10
Coon, Hiram J. . . . .	Lafayette	Pike, Albert D. . . . .	Romney	R. D
Charter, Jno. H. . . . .	Lafayette	Powers, E. D. . . . .	Lafayette	R. D
Crain, Chas. H. . . . .	Lafayette	Preuzniger, J. R. . . . .	Lafayette	R. D
Crider, Geo. W. . . . .	Buck Creek	Rose, F. W. . . . .	Lafayette	R. 10
Crouse, J. H. . . . .	Dayton	Riney, H. W. . . . .	Lafayette	R. D
Dienhart, Michael . . . .	Lafayette	Rush, Moses A. . . . .	Lafayette	R. D
Dunbar, James . . . . .	Battle Ground	Riddle, H. D. . . . .	Battle Ground.	R. 10
Ellis, James D. . . . .	Battle Ground	Snyder, Leander . . . . .	Lafayette	R. 10
Ellsworth, James . . . .	Glen Hall	Searight, Samuel R. . . .	Lafayette	R. D
Field, Henry J. . . . .	Lafayette	Spaulding, Joseph . . . .	Lafayette	R. D
Fiefield, Alice P. . . . .	Lafayette	Stallard, J. S. . . . .	Monitor	R. 3
Fisher, Jno. J. . . . .	Lafayette	Smith, John M. . . . .	Lafayette	H. D
Fickle, James . . . . .	Stockwell	Shill, C. W. . . . .	Lafayette	R. D
Fox, S. R. . . . .	Lafayette	Simison, Jno. F. . . . .	Romney	R. D
Fox, R. W. . . . .	Lafayette	Simison, Jno . . . . .	Romney	R. 3
Fiefield, Alice P. . . . .	Lafayette	Simpkins, R. C. . . . .	Romney	R. 3
Goldsberry, Strader S. . .	Montmorency	Vinnedge, W. W. . . . .	Lafayette	R. D
Hecker, L. F. . . . .	Lafayette	Walker, W. S. . . . .	Lafayette	R. D
Heupe, Carl . . . . .	Lafayette	WETHERILL, R. B. . . .	Lafayette	R. D
Hunt, Cyrus E. . . . .	Odell	Washburn, Geo. W. . . . .	Lafayette	E. 10
Hill, William K. . . . .	Dayton	Washburn, Samuel S. . . .	Lafayette	R. D
Irwin, Luther M. . . . .	Lafayette	Washburn, Oliver . . . .	Odell	R. D
Ingersoll, B. F. . . . .	Lafayette	Yount, Silas T. . . . .	Lafayette	R. D
Ingersoll, J. M. . . . .	Lafayette	Yager, Wm. J. . . . .	Glen Hall	R. D
Keiper, Christian B. . . .	Lafayette	Yeakle, D. T. . . . .	Lafayette	R. D
Kirkpatrick, Geo. W. . . .	Lafayette			

Regular, 67; Eclectic, 5; Homeopathic, 6; not reported, 6.

*Tipton County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Armfield, Tilmond O.	Tipton.	R. D	Jessup, John T.	Curtisville.	R. D
Austin, Winsor.	Windfall.	R. 10	Lindsay, Jas. P.	Sharpsville.	R. 10
Baldwin, Mahlon F.		E. D	Miller, Lewis C.		R. D
Batnan, F. M.	Tipton.	R. D	McAllister, Lewis.	Windfall.	R. 10
Doan, Nathan W.	New Lancaster.	R. 10	Newcomer, M. V. B.	Tipton.	R. D
DICKEY, A. S.	Tipton.	R. D	Pitzer, A. B.	Tipton.	R. D
Downing, Samuel G.	Hobbs.	R. D	Repp, Geo. R.	Goldsmith.	R. 3
Collins, Geo. M.	Minster.	R. D	Rubush, D. P.	Sharpsville.	R. 3
Cook, F. S. W.	Curtisville.	P.-M. D	Stephenson, Jos. A.	Kempton.	R. 3
Cooper, John.	Groomsville.	P.-M. D	Spitzmesser, John L.	Windfall.	E. 10
Glass, Wm. M.	Atlanta.	R. D	Somers, Jos. A.	Groomsville.	R. 10
Guy, Mary L.		P.-M. D	Scott, Edwin.		E. D
Grove, Jasper M.	Tipton.	R. 10	Van Nuy, Wm.	Tipton.	R. D
Go-sett, Jas. M.	Normanda.	R. 10	Vickrey, M. V. B.	Tipton.	R. D
Garretson, Wm. M.		R. D	Wood, Geo. C.	Tipton.	R. D
Heath, Wm. N.	Sharpsville.	R. 3	Ware, C. M.	Tipton.	R. D
Hildrup, J. R.	Windfall.	P.-M. D	Zeek, Farlow S.	Tipton.	R. 10

Regular, 26; Eclectic, 3; Physio-Medical, 5.

*Union County.*

Beam, D.	Liberty.	N. R. 10	Moore, H. H.	Liberty.	R. D
Edsell, H. P.	Billingsville.	E. 10	Pisgan, Garrett.	Liberty.	R. D
Foadick, A. C.	Liberty.	R. 10	Shriner, W. W.	Liberty.	E. 10
Hastings, Z. B.	Billingsville.	R. D	Sigler, Geo. A.	Liberty.	R. D
Hendricks, J. L.	Fairfield.	N. R. 3	Smith, J. A.	Brownsville.	R. 10
Kell, S. D.	Liberty.	R. 10	THOMPSON, E. C.	Liberty.	H. D
McElwee, H.	Colter's Corner.	R. D	Williams, O. A.	Lotus.	H. 10
Morris, J. E.	Liberty.	R. D			

Regular, 9; Homeopathic, 2; Eclectic, 2; not reported, 2.

*Vanderburgh County.*

Ashford, Henry S.	Evansville.	R. D	Gumaer, C. H.	Evansville.	R. D
Achilles, F. W.	Evansville.	R. D	Gramm, Wm.		R. D
Armstead, Rich'd A.	McCutchanville.	N. R. 10	Hayden, A. M.	Evansville.	R. D
Allen, Thos. E.		H. D	Herr, L. S.	Evansville.	E. D
Bennett, Alfred T.	Evansville.	R. D	Hayhurst, A. S.	Evansville.	N. R. 10
Brose, Louis D.	Evansville.	R. D	Hartloff, Richard.	Evansville.	R. D
Bryan, A. H.	Evansville.	R. D	Hodson, George.	Evansville.	R. D
Bryan, Stanton L.	Evansville.	R. D	Hooker, Henry H.	Oakdon.	R. 10
Babcock, Wm. D.	Evansville.	R. D	Illing, August F.	Evansville.	N. R. 10
Blount, Joseph F.	Evansville.	N. R. 10	Knapp, Chas.	Evansville.	R. D
Binkley, John T.	Evansville.	R. D	Kerth, Jacob H.	Evansville.	R. D
Bartenwerfer, C. A.	Evansville.	N. R. —	Kelly, F. H.	Evansville.	R. D
Bacon, Chas. C.	Evansville.	R. D	Laval, Wm. J.	Evansville.	R. D
Begley, Baxter W.	Evansville.	R. D	Laval, John.	Evansville.	N. R. 10
Barker, A. B.		E. D	Macer, Thos.	Evansville.	E. D
Caldwell, Matilda.	Evansville.	N. R. 10	Mulhausen, Mathias.	Evansville.	R. D
Compton, John W.	Evansville.	R. D	Maghee, Wm. A.	Evansville.	R. D
Compton, Fred S.	Evansville.	R. D	McMahon, Agnes.	Evansville.	R. D
Conden, W. C.	Evansville.	H. D	McClurken, Jos. C.	Evansville.	R. D
Corlew, Rufus M.	Evansville.	R. D	McCoy, P. G.	Evansville.	R. D
Carter, E. L.	Evansville.	R. D	Minton, John C.	McCutchanville.	R. D
Clark, John L.		N. R. 10	Montaux, Carl G. R.		R. D
Dow, John L.	Evansville.	R. D	Owen, John E.	Evansville.	R. D
Day, B. J.	Evansville.	R. D	Owen, Abraham M.	Evansville.	R. D
Davis, F. L.	Evansville.	H. D	Ot mann, P.	St. Joseph.	R. D
Dixon, Henry T.	Evansville.	R. D	O'Leary, Arthur.		R. D
Eiskamp, G. H.	Evansville.	R. D	Pollard, Wm. S.	Evansville.	R. D
Fritsch, Wm. A.	Evansville.	R. D	Pirnat, Johannes.	Evansville.	R. D
Fritsch, Ludwig.	Evansville.	N. R. 10	Powell, Thos. E.	Evansville.	R. D
Failing, Walter R.	Evansville.	N. R. 10	Purdue, Geo. C.	Evansville.	R. D
Folsetter, Wm.	Evansville.	R. D	Ralston, W. G.	Evansville.	R. D
Fuller, Fred F.		N. R. 10	Rucker, Thos. H.	Evansville.	R. D
Gumberts, Simon.	Evansville.	N. R. 10	Rose, Wm. B.	Evansville.	R. D
Gardner, J. S.	Evansville.	R. D	Reavis, Wm. J.	Evansville.	R. D
Gilbert, Geo.	Evansville.	N. R. 10	Rouark, S.	Kratzville.	E. D
Green, Willis S.	Evansville.	N. R. 3	Rutter, John.		R. D

*Vanderburgh County—Continued.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Spencer, Ethan. . .	Evansville . . .	R. 10	Vitzdamm, Wm . . .	Evansville . . .	N. R. 10
Schuyler, P. L. . .	Evansville . . .	R. D	WALKER, GEO. B . .	Evansville . . .	R. D
Schultz, Theodore .	Evansville . . .	H. 10	Walker, Edwin . . .	Evansville . . .	R. D
Sherman, H. M. . .	Evansville . . .	R. D	Williams, Floyd . .	Evansville . . .	R. D
Sawyer, Freeman W .	Evansville . . .	R. D	Wilton, Isaiah . . .	Evansville . . .	R. D
Sieffert, A. H. H . .	Evansville . . .	R. D	Weaver, John B . . .	Evansville . . .	R. D
Schmidt, Florian C .	Evansville . . .	N. R. 10	Weber, Wm . . . . .	Evansville . . .	N. R. 10
Suiter, Wilhelmina .	Evansville . . .	N. R. 10	Worsham, Ludson . .	Evansville . . .	R. D
Simons, Philip H . .	Evansville . . .	R. D	Wilde, Herman . . .	Evansville . . .	N. R. 10
Taylor, Theodore H .	Evansville . . .	H. D	Wedding, C. V . . .	Evansville . . .	R. D
Tapp, Wm. J. . . . .	Evansville . . .	E. 3	Walden, W. M . . .	Evansville . . .	R. D
Tilman, Monroe . . .	Evansville . . .	N. R. 10	Witting, Anthony P .	Evansville . . .	R. D
Tyrrell, C. C . . . .	Evansville . . .	H. D	Young, G. M . . . .	Evansville . . .	N. R. 10
Tandeloff, Geo . . .	Evansville . . .	R. D	Yates, Geo. W . . .	Evansville . . .	N. R. 10
Thorp, Baron C . . .	Evansville . . .	R. D			

Regular, 68; Eclectic, 5; Homeopathic, 5; not reported, 22.

*Vermillion County.*

Bogart, John H . . .	Clinton . . . . .	R. D	Lonsdale, Thomas N .	St. Bernice . . .	E. D
Barnes, James A . .	Gessie . . . . .	R. D	Mack, Erastus . . . .	Hillsdale . . . .	E. 10
Eaton, Henry C . . .	Toronto . . . . .	R. 10	Nebeker, Henry . . .	Clinton . . . . .	R. D
Flaucher, E. A . . .	Eugene . . . . .	E. 3	Newton, G. O . . . .	Dana . . . . .	R. D
HALL, M. L . . . . .	Newport . . . . .	R. D	Shepard, Hiram . . .	Dana . . . . .	R. D
Hall, W. I . . . . .	Gessie . . . . .	R. D	Shepard, Lewis . . .	Newport . . . . .	R. D
Harrison, John C . .	Dana . . . . .	E. 10	Spottswood, — . . .	Perryville . . . .	R. D
James, Harry H . . .	St. Bernice . . .	R. 10	White, C. M . . . . .	Clinton . . . . .	R. D
Johnson, D. D . . .	Perryville . . . .	R. 10	Wallace, James . . .	Newport . . . . .	R. D
Keyes, Otis M . . . .	Dana . . . . .	R. D	Watkins, H. T . . .	St. Bernice . . .	H. D
Kinderman, Alex . .	Eugene . . . . .	R. D	Webb, James B . . .	Perryville . . . .	E. 10

Regular, 16; Eclectic, 5; Homeopathic, 1.

*Vigo County.*

Armstrong, Wm. P . .	Terre Haute . . .	R. D	Hyde, John . . . . .	Terre Haute . . .	H. 3
Askren, C. F . . . .	Terre Haute . . .	R. D	Hood, Thomas C . . .	Terre Haute . . .	R. D
Brunker, James W . .	Riley . . . . .	R. D	Hanes, David . . . .	Terre Haute . . .	E. 10
Baldridge, John H . .	Terre Haute . . .	E. D	Holloway, Theophilus	Fontanet . . . . .	R. 3
Ball, Lawrence S . . .	Prairieion . . . .	E. D	Hayworth, W. W . .	Terre Haute . . .	R. D
Bennett, Stephen M .	New Goshen . . .	E. D	Hendricks, H. W . .	Terre Haute . . .	E. D
Brown, Theodore F .	Sandford . . . . .	R. 10	Hunt, John S . . . .	Macksville . . . .	R. D
Belt, Richard . . . .	Sandford . . . . .	R. 3	Jenkins, Wilber O . .	Terre Haute . . .	R. D
Ball, Cutler T . . . .	Terre Haute . . .	R. D	Kenedy, Thos. W . .	Lewis . . . . .	R. D
Crowley, Thomas N .	Terre Haute . . .	R. D	King, Wm. H . . . .	Fontanet . . . . .	R. 10
CRAPO, JOHN R . . .	Terre Haute . . .	R. D	Laughhead, Jas. T . .	Terre Haute . . .	R. D
Crapo, G. W . . . . .	Terre Haute . . .	R. D	Littlejohn, Henry C .	Riley . . . . .	R. D
Collings, Wm. O . . .	Pimento . . . . .	R. D	Larkins, Edgar L . .	Terre Haute . . .	R. D
Carson, Louis E . . .	Prairieion . . . .	R. D	Link, John E . . . .	Terre Haute . . .	R. D
Caldwell, Henry H . .	Terre Haute . . .	R. 10	Leachman, James S .	Burnett . . . . .	R. D
Casto, Jabez C . . . .	Terre Haute . . .	R. D	Mitchel, John D . . .	Terre Haute . . .	R. D
Cadle, Wm. J . . . .	Terre Haute . . .	N. R. 10	Melton, Seth B . . .	Burnett . . . . .	R. 3
Carson, Julian C . .	Prairie Creek . .	R. 3	Moorhead, Thos. W .	Terre Haute . . .	R. D
Dooley, Rufus L . . .	Atherton . . . . .	R. 3	Mattox, Wm. R . . .	Youngstown . . .	R. 3
Dolson, James B . . .	Pimento . . . . .	R. 10	Morgan, John H . . .	New Goshen . . .	R. D
Drake, Thomas G . . .	Prairieion . . . .	R. D	Moore, Wilmot . . . .	Terre Haute . . .	H. D
Davis, John W . . . .	Pimento . . . . .	N. R. 10	Moore, James A . . .	Prairie Creek . .	R. D
Drake, James F . . . .	Prairieion . . . .	R. D	Mann, Henry D . . .	Terre Haute . . .	R. D
Elder, Wm. K . . . .	Terre Haute . . .	H. D	McCorkle, Thos. H . .	Ellsworth . . . . .	R. D
Eichelberger, Wm. C .	Terre Haute . . .	R. D	McLaughlin, James .	Seeleyville . . . .	R. D
Everett, George H . .	Terre Haute . . .	R. D	McClain, Lesly . . . .	Terre Haute . . .	R. D
Forseythe, Mary . . .	Terre Haute . . .	R. D	McJohnson, Asbury D.	Pimento . . . . .	R. D
Ferris, Edmond . . . .	Terre Haute . . .	R. D	Nebergall, James W .	Prairie Creek . .	R. 10
Gerstmeier, Chas. P .	Terre Haute . . .	R. D	Preston, Samuel C . .	Terre Haute . . .	R. D
Glover, Elmer E . . .	Terre Haute . . .	R. D	Pike, Lyman . . . . .	Terre Haute . . .	E. 10
Given, Chas. C . . . .	Lewis . . . . .	R. D	Pence, Allen . . . . .	Terre Haute . . .	N. R. 10
Graham, F. B., Farmers'b'g. Sui. Co	N. R. 10		Pinson, Andrew J . .	New Goshen . . .	R. D
Gilmore, Andrew H . .	Terre Haute . . .	E. 3	Poindexter, John . .	Nelson . . . . .	R. D
Hickson, George W . .	Terre Haute . . .	R. D	Roberts, Wm. H . . .	Terre Haute . . .	R. D
Hartley, Hiram J . . .	Terre Haute . . .	R. D	Richardson, Sam'l C .	Terre Haute . . .	P. M. D
Hickman, Cornelius W .	Fontanet . . . . .	E. D	Russell, Charles W . .	Riley . . . . .	R. D

*Vigo County—Continued.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Rice, Spencer M.	Terre Haute	R. D	Tomlin, Benj. F.	Terre Haute	R. D
Swafford, Benj. F.	Terre Haute	R. D	Thompson, J. C.	Terre Haute	R. D
Spain, Archiball W.	Terre Haute	R. D	Taylor, Elizabeth P.	Terre Haute	H. 3
Schreimer, Bernhardt	Terre Haute	P. M. D	Talbot, John M.	Prairie Creek	R. 10
Shaley, Frederick W.	Terre Haute	R. D	Van Elderen, John	Terre Haute	N. R. —
Stunkard, Thomas C.	Terre Haute	R. D	Willien, Leon J.	Terre Haute	R. D
Swap, John H.	Sandford	R. 10	Waters, Moses H.	Terre Haute	H. D
Shickel, John F.	Terre Haute	R. 10	Weinstein, Leon J.	Terre Haute	R. D
Stark, Wm. I.	Coal Bluff	H. D	Watkins, Samuel	Ellsworth	R. D
Stoek, Louis K.	Lewis	E. D	Worrell, J. P.	Terre Haute	R. D
Smith, Wm.	Riley	R. 3	Wilson, Angeline L.	Terre Haute	P. M. D
Stewart, Harvey W.	Terre Haute	R. D	Williams, James A.	Terre Haute	R. D
Spencer, Wm. B.	Terre Haute	R. D	Warren, Louis R.	Terre Haute	R. D
Standacker, Albert	Terre Haute	R. 3	Williamson, John W.	Terre Haute	E. D
Treat, Horace J.	Terre Haute	E. D	Young, Stephen J.	Terre Haute	R. D
Toby, Orlando C.	Terre Haute	R. D			

Regular, 78; Eclectic, 11; Homeopathic, 6; Physio-Medical, 2; not reported, 3.

*Wabash County.*

Ader, Henry	Somerset	R. D	Lower, Jno. M.		R. D
Biggerstaff, J. T.	Lagro	R. 3	Modracer, Jno. M.	Wabash	R. 3
Bloomer, F. H.	Pleasant View	R. D	McGrew, W. H.	Lafontaine	E. D
Blount, R. F.	Wabash	R. D	Mooney, H. C.	Laketon	R. D
Brady, T. R.	Lincolnville	R. D	Macey, E. F.		H. D
Broadbeck, G. H.	Roann	R. D	Minnick, H. R.	Treaty	R. D
Brown, Jno. W.	Wabash	R. D	Moore, Perry G.	Rich Valley	R. D
Bricker, Wm.	Lincoln	E. 3	Misener, H. E.		P. M. D
Carper, A. J.	Liberty Mills	R. D	Murphy, Reuben.		N. R. 10
Dicken, J. L.	Lafontaine	R. D	O'Neal, Laughlin	Somerset	R. D
Dicken, C. L.	Lafontaine	R. D	Renner, Jno. H.	Lagro	R. D
Donaldson, E. F.	Wabash	R. D	Renner, M. E.	Lagro	R. D
Dunn, W. H.	Wabash	H. D	Shaffer, Phillip.	N. Manchester	R. D
Ellis, C. S.	Wabash	E. 10	Stradley, D. W.	Wabash	R. 10
FORD, JAS. H.	Wabash	R. D	Shellhamer, C.	Pucker Brush	E. D
French, P. J.		R. D	Smith, A. J.	Wabash	R. D
Ginther, David.	N. Manchester.	E. 10	Studley, J. W.	Lafontaine	R. D
Goshorn, D. A.	N. Manchester.	R. 10	Taylor, Zachary		R. D
Hale, M. L.	Lagro	R. D	Thomas, A. McD.	Lafontaine	R. D
Holloway, A. L.	Wabash	E. D	Trembley, G. D.		R. D
Hubbard, Charles		N. R. D	Wallace, L. S.		R. D
Jeasup, L. F.	Wabash	R. D	Wale, F. M.	Urbana	R. 10
Jones, Joseph H.	Roann	R. 10	Welshiner, Jno. M.	N. Manchester	H. D
Kautz, Jno.	Dora	R. D	Wells, Wm. Y.	Laketon	E. D
Kidd, G. P.	Roann	R. D	Winton, Horace	N. Manchester	R. D
Lambert, Geo. W.	Urbana	E. D	Yagerheimen, Jno.		N. R. 10
Lower, Melvin	N. Manchester	R. D			

Regular, 38; Eclectic 8; Homeopathic, 3; Physio-Medical, 1; not reported, 3.

*Washington County.*

Applegate, George	South Boston	N. R. 10	Hon, George W.	Hardinsburg	R. 10
Bare, John R.	Salem	R. D	Lockhart, Thomas	Cambellsburg	R. 3
Bradshaw, A. E.	Halo	R. D	Layman, James H.	Chestnut Hill	R. 10
Bright, Will H.	Martinsburg	R. D	MURPHEY, CHAS. W.	Salem	R. D
Barnett, John T.	Hardinsburg	R. D	Martin, Robt. W.	Cambellsburg	R. D
Baker, T. H. B.	Pekin	R. D	Maxedon, Robt. W.	Hardinsburg	R. D
Brannock, B. B.	Little York	R. 3	McPheeters, John S.	Hardinsburg	R. D
Crim, Martin.	Harristown.	P. M. 10	Mitchell, James J.	South Boston	R. D
Duff, Samuel D.	Salem	R. D	Martin, Will H.	Cambellsburg	R. 10
Deweese, George W.	Fredricksburg.	R. 10	Neyman, E. M. C.	Salttilloville	R. 10
Ferree, Isaac	Livonia	R. D	Oatley, John H.	New Philadelph'a	R. 10
Fouts, Henry C.	Hardinsburg	R. D	Overman, William	Salem	P. M. D
Hudson, Lycour. H.	Little York	E. D	Overman, Ed. T.	Salem	P. M. D
Hobbs, Havilla C.	Salem	E. D	Paynter, C. L.	Salem	R. D
Herron, Thom. W.	Little York	R. 10	Perkhiser, Will J.	Livonia	R. D
Hancock, George	Cambellsburg	R. D	Rathborn, Charles	Salem	R. 10
Howard, Sam B.	Kossuth	R. 3	Roberts, Sam A.	Fredricksburg	R. D
Hogsett, J. W.	Salttilloville	R. D	Spurgeon, Ambrose M.	Rush Cr'k Val'y	R. D
Harrod, Sam B.	Canton	R. D	Schoonover, Will S.	Hardinsburg	R. 10
Hoggatt, Mahlon L.	Salem	E. 10	Tucker, Thomas M.	Salem	R. D
Henderson, James P.	Salem	R. D	Voyles, Virgil A.	Livonia	R. 3
Henderson, Harvey D.	Salem	R. D	Wier, Alonzo G.	Kossuth	R. D

Regular, 37; Eclectic, 3; Physio-Medical, 3; not reported, 1.

*Warren County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Birch, E. R. . . . .	State Line. . . . .	R. D	Osburn, S. N. . . . .	Rainsville. . . . .	R. D
Brown, Nathan . . . . .	State Line. . . . .	E. 10	Porter, A. M. . . . .	State Line. . . . .	R. D
Campbell, T. B. . . . .	West Lebanon. . . . .	R. D	ROSS, JUSTIN. . . . .	Williamsport. . . . .	R. D
DeHart, Jacob . . . . .	Williamsport . . . . .	R. D	Ried, Sam M. . . . .	Independence. . . . .	R. D
Fenton, Sam C. . . . .	Pine Village. . . . .	R. D	Roseberry, J. A. . . . .	Independence. . . . .	R. 3
Fleming, Jackson . . . . .	West Lebanon. . . . .	R. D	Swank, Leroy . . . . .	Williamsport . . . . .	R. D
Green, Wilber H. . . . .	Hedrick . . . . .	E. D	Stenart, J. C. . . . .	Marshfield. . . . .	R. D
Hoffman, C. H. . . . .	Rainsville . . . . .	R. D	Trent, J. W. . . . .	Marshfield . . . . .	E. 10
Moore, A. V. . . . .	Williamsport . . . . .	R. D	Vick, W. B. . . . .	Green Hill. . . . .	E. D
McMullen, J. W. . . . .	Pine Village. . . . .	R. 3	Wicoff, R. H. . . . .	Rainsville. . . . .	E. 10
McTurnan, M. J. . . . .	Independence. N. R. 10				

Regular, 15; Eclectic, 5; not reported, 1.

*Warrick County.*

Beeler, Jerome I. . . . .	Boonville . . . . .	E. D	Lamar, H. L. . . . .	Boonville . . . . .	H. D
Brown, A. P. . . . .	Heilman . . . . .	R. 3	Logsdon, M. J. . . . .	Lynnville . . . . .	N. R. 10
Baldwin, I. J. . . . .	Lynnville . . . . .	E. D	Magenheimer, Peter . . . . .	Elberfeld . . . . .	R. D
Bright, O. C. . . . .	Folsomville . . . . .	N. R. 10	Mills, W. H. . . . .	Folsomville . . . . .	R. D
Camp, G. H. . . . .	Lynnville . . . . .	E. 10	McCoy, T. J. . . . .	Eby . . . . .	R. 10
Camp, J. W. . . . .	Lynnville . . . . .	E. 10	McVey, W. H. . . . .	Selvin . . . . .	R. 10
Camp, W. O. . . . .	Dickeyville . . . . .	E. 10	Neely, S. M. . . . .	Chandler . . . . .	R. D
Camp, W. F. . . . .	Eby . . . . .	E. 3	Newton, J. A. . . . .	Boonville . . . . .	H. 10
Dailey, W. W. . . . .	Boonville . . . . .	R. 10	Pierce, W. O. . . . .	Indian Dr. 10	
Dailey, T. G. . . . .	Boonville . . . . .	R. 10	Quayatt, Allison . . . . .	Tennyson . . . . .	R. 10
Dailey, T. J. . . . .	Tennyson . . . . .	R. 10	SCALES, W. B. . . . .	Boonville . . . . .	R. D
Dubois, J. N. . . . .	Newburg . . . . .	H. D	Shaul, M. . . . .	Boonville . . . . .	R. D
DeForrest, D. A. . . . .	DeForrest . . . . .	R. D	Smith, Thomas . . . . .	Canal . . . . .	R. D
Edgington, Jesse. . . . .	Yankeetown. . . . .	R. D	Slaughter, W. W. . . . .	Newburg . . . . .	R. D
Grim, S. . . . .	Elberfeld . . . . .	R. D	Sherman, H. M. . . . .	Boonville . . . . .	R. D
Gatewood, Thos. H. . . . .	Dagonia. . . . .	R. D	Simons, P. H. . . . .	Lynnville . . . . .	R. D
Howard, Thos. M. . . . .	Boonville. . . . .	R. D	Scales, T. D. . . . .	Boonville . . . . .	R. D
Hatfield, Ben. F. . . . .	Elberfeld . . . . .	R. D	Temple, W. R. . . . .	Selvin . . . . .	R. 10
Hewens, W. A. . . . .	Chandler . . . . .	R. D	Tyner, S. L. . . . .	Boonville . . . . .	R. D
Hunt, W. A. . . . .	Lynnville . . . . .	R. 10	Tilman, J. R. . . . .	Newburg . . . . .	R. D
Hedden, G. J. . . . .	Selvin . . . . .	R. 10	Thompson, P. S. . . . .	Newburg . . . . .	R. D
Hammel, John . . . . .	Elberfeld . . . . .	R. D	West, E. A. . . . .	Folsomville . . . . .	R. 10
Houser, Jas. A. . . . .	Boonville . . . . .	P. M. D	Wilson, W. D. . . . .	Yankeetown. . . . .	R. D
Hoover, P. N. . . . .	Boonville . . . . .	R. D	Watson, W. D. . . . .	Tennyson . . . . .	R. 10
Jones, T. B. . . . .	Lynnville . . . . .	R. D	Wilde, G. O. . . . .	Boonville . . . . .	R. 10
Keegan, C. J. . . . .	Canal . . . . .	R. D	Younge, W. P. . . . .	Boonville . . . . .	R. D
Keifer, Chas. . . . .	Newburg . . . . .	R. 10	Zimmerman, J. . . . .	Lynnville . . . . .	R. 3
Lacke, George . . . . .	Newburg . . . . .	R. D			

Regular, 42; Eclectic, 6; Homeopathic, 4; Physio-Medical, 4; not reported, 2.

*Wayne County.*

Allen, John B. . . . .	Hagerstown . . . . .	R. D	Dibble, Leroy . . . . .	Dublin . . . . .	R. D
Bond, Charles S. . . . .	Richmond . . . . .	R. D	Day, G. Ward . . . . .	Dublin . . . . .	H. 10
Ballenger, William L. . . . .	Richmond . . . . .	R. D	Emmons, Joshua . . . . .	Richmond . . . . .	H. D
Baer, Oliver P. . . . .	Richmond . . . . .	H. D	Green, Daniel W. . . . .	Fountain City . . . . .	P. M. D
Benham, Harvey C. . . . .	Richmond . . . . .	E. D	Gordon, G. C. . . . .	Centerville . . . . .	R. 10
Ballard, Nathan H. . . . .	Richmond . . . . .	R. D	Griffs, William T. . . . .	Whitewater . . . . .	E. D
Bappart, A. . . . .	Richmond . . . . .	R. 10	Gabel, Harrison . . . . .	Centerville . . . . .	R. D
Baldwin, George C. . . . .	Dalton . . . . .	N. R. 3	Graham, William B. . . . .	Cox's Mill . . . . .	E. 3
Boyd, H. B. . . . .	Cambridge City . . . . .	R. D	Grosvenor, E. B. . . . .	Richmond . . . . .	H. D
Bunnell, Rhodes W. . . . .	Greensfork . . . . .	R. D	HIBBERD, JAS. F. . . . .	Richmond . . . . .	R. D
Blount, Cyrus N. . . . .	Hagerstown . . . . .	R. D	Harold, C. N. . . . .	Richmond . . . . .	P. M. D
Boyd, Samuel S. . . . .	Dublin . . . . .	R. D	Hobbs, Marmaduke W. . . . .	Richmond . . . . .	R. D
Buntin, Edwin A. . . . .	Greensfork . . . . .	R. D	Howells, Joseph . . . . .	Richmond . . . . .	H. D
Colburn, Clarence P. . . . .	Richmond . . . . .	R. D	Hadley, Edwin . . . . .	Richmond . . . . .	R. 10
Carter, Nathan P. . . . .	Richmond . . . . .	R. D	Haynes, M. H. . . . .	Richmond . . . . .	R. D
Carr, Oliver C. . . . .	Boston . . . . .	E. D	Helm, William M. . . . .	Williamsburg . . . . .	E. D
Corey, W. McG . . . . .	Richmond . . . . .	E. D	Huff, Oliver N. . . . .	Fountain City . . . . .	R. D
Canaday, N. F. . . . .	Hagerstown . . . . .	H. D	Homsher, George W. . . . .	Dublin . . . . .	N. R. 10
Clark, John M. . . . .	Economy . . . . .	R. 10	Harris, John S. . . . .	Fountain City . . . . .	R. D
Clark, J. B. . . . .	Economy . . . . .	R. D	Intzi, Joseph . . . . .	Richmond . . . . .	R. D
Carpenter, Daniel L. . . . .	Cambridge City . . . . .	N. R. 10	Johnston, Melville F. . . . .	Richmond . . . . .	R. D
Dempsey, William S. . . . .	Richmond . . . . .	R. D	Jay, William C. . . . .	Richmond . . . . .	E. D
Dwiggins, Moses F. . . . .	Richmond . . . . .	R. D	Johnson, Levi C. . . . .	Fountain City . . . . .	R. D
Davis, T. Henry . . . . .	Richmond . . . . .	H. D	Kelsey, Leverett S. . . . .	Richmond . . . . .	R. D

## Wayne County—Continued.

Name.	Postoffice.	School.	Name.	Postoffice.	School.
Kersey, Charles A.	Richmond	R. D	Sweney, Isaac F.	Milton	R. D
King, James E.	Richmond	R. D	St. Clair, John W.	Milton	R. 10
King, William F.	Centerville	R. D	Summers, John B.	Milton	R. D
Kersey, Silas H.	Centerville	R. D	Southworth, A.	Dublin	H. D
Loar, Apollas	Richmond	P. M. D	Swallow, James E.	Abington	R. D
Luken, John H.	Richmond	R. D	Shoff, Jacob S.	E. Germantown	R. D
Lowe, George N.	Cambridge City	N. R. 10	Schiltneck, Vandyke G.	Economy	R. D
Moore, Chas. H.	Richmond	R. D	Taylor, James E.	Richmond	R. D
Mendenhall, Wm. O.	Richmond	R. D	Thomas, Mary F.	Richmond	R. D
Morrow, Sarah J.	Richmond	R. 3	Thomas, Owen	Richmond	R. D
McDivitt, Eli G.	Richmond	H. D	Teague, Isaac C.	Richmond	H. D
Mauk, John R.	Cambridge City	R. D	Taylor, Timothy W.	Fountain City	R. D
Marshall, James V.	Whitewater	R. 10	Tillson, Hosea	Centerville	R. 10
Moore, Silas H.	Greensfork	R. D	Taylor, Livingston B.	Dublin	R. 10
Meek, Joseph	Webster	R. 10	Thurston, Eli H.	Hagerstown	P. M. 10
McTaggart, Charles	Dublin	E. D	Thurston, Joseph M.	Hagerstown	P. M. D
Neff, W. Webster		K. 3	Taylor, Linas P.	Williamsburg	E. D
Patterson, Evan L.		R. D	Watts, John S.	Richmond	E. D
Putnam, Jacob H.		R. D	Watts, Eber K.	Richmond	R. D
Rusk, Anne E.	Richmond	P. M. D	Wampler, John M.	Richmond	R. 3
Robbins, George W.	Richmond	R. D	Weist, Jacob R.	Richmond	R. D
Reed, Wilson	Centerville	N. R. D	Wallace, Julius M.		N. R. 10
Rogers, Samuel G.	Nettle Creek	E. D	Wright, Ivy Elisha	Hagerstown	E. D
Rife, John J.	Boston	R. D	Witmer, Benjamin M.	Milton	E. 10
Rutledge, John W.	Cambridge City	R. D	Wayman, James V.	Cambridge City	R. D
Study, Joseph N.	Cambridge City	R. D	Williams, William	Whitewater	E. 10

Regular, 64; Homeopathic, 10; Eclectic, 14; Physio-Medical, 6; not reported, 6.

## Wells County.

Bergman, Noah	Toecin	E. 10	Horton, Edwin R.	Bluffton	E. D
Cadwalader, George	Reiffburg	E. 10	Horton, Theo.	Bluffton	R. 10
Cassell, George W.	Mt. Zion	E. 3	Maddox, Leander	Keystone	R. D
Cook, L.	Bluffton	R. D	Mason, Leonidas	Bluffton	R. D
Connett, J. L.	Poneto	E. D	Mitts, Jno. I.	Ossian	R. 3
Crum, Jno. W.	Barber's Mills	R. D	Mitts, Alfred H.	Ossian	R. 3
Cummins, P. R.	Bluffton	R. 10	Morris, Thomas	Mt. Zion	R. D
Cummins, B. F.	Bluffton	R. D	Milsheimer, C. F.	Bluffton	R. 3
Davenport, E. P.	Craigville	R. 3	Murray, L. E.	Zanesville	R. D
Doster, H.	Poneto	R. D	McDowell, Jacob.	Mt. Zion	E. 10
Fulton, Geo. E.	Bluffton	R. D	Neff, Isaac N.	Barber's Mills	E. 10
Fulton, Jno. C.	Murray	R. 3	Newman, M. N.	Ossian	R. D
Garrett, F. W.	Liberty Center	E. 3	Run, Robt. W.	Mt. Zion	E. 10
GORRELL, A. G.	Bluffton	R. D	Spalding, Leander	Bluffton	R. D
Goodin, Sam'l A.	Keystone	E. 3	Waldrun, R. A.	Nottingham	E. 10
Hanton, Asa	Liberty Center	E. 3	Weer, Harry H.	Bluffton	E. D

Regular, 19; Eclectic, 13.

## White County.

Abbott, B. F.	Burnettsville	R. 3	Kelly, D. M.	Brookston	R. D
Ballow, A. B.	Wolcott	R. D	Medaris, John	Brookston	R. 10
Baugh, J. W.	Chalmers	R. D	McAllister, J. W.	Idaville	R. 3
BUSHNELL, S. B.	Monticello	R. 10	Palmer, R. B.	Idaville	E. 10
Carr, Jas. T.	Monon	R. D	Reed, J. T.	Monon	R. 10
Conger, S. R.	Monticello	E. D	Robinson, F. B.	Monticello	E. D
Clark, R. J.	Monticello	R. D	Reed, John A.	Idaville	R. D
Cooper, Wm. B.	Monticello	R. D	Smith, J. T.	Brookston	R. D
Clayton, Geo. R.	Monon	R. D	Spencer, Wm.	Monticello	R. D
Delzell, R. M.	Reynolds	R. 10	Scott, Caleb	Monticello	P. M. 10
Didlake, M. T.	Monticello	R. D	Sluyton, S. D.	Reynolds	E. 3
Grant, F. A.	Wolcott	R. 3	Sampson, W. H.	Brookston	E. 10
Henry, T. W.	Burnettsville	P. M. 10	Welty, Isadore	Buffalo	P. M. 10
Jones, A. B.	Burnettsville	R. D			

Regular, 19; Eclectic, 5; Physio-Medical, 3.



*Whitley County.*

<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>	<i>Name.</i>	<i>Postoffice.</i>	<i>School.</i>
Ammerman, S. D. . .	Columbia City. .	H. 10	Merriman, E. . . .	South Whitley. .	R. D
Criswell, J. F. . . .	Cherubusco . . .	R. D	Mitten, A. P. . . .	Columbia City. .	R. D
EBERHARD, E. L. . .	South Whitley . .	R. D	Richards, John. . .	Laud . . . . .	E. D
Eckman, G. W. . . .	Coesse . . . . .	R. 10	Souders, C. . . . .	Larwill . . . . .	R. D
Grisier, F. G. . . .	Collins . . . . .	R. D	Squires, J. W. . . .	Cherubusco . . .	R. D
Ireland, Martin . . .	Columbia City. .	R. D	Scott, J. W. . . . .	Hecla . . . . .	R. D
Kirkpatrick, D. . . .	Larwill . . . . .	R. D	Weber, Wm. . . . .	Columbia City. .	R. D
Kithcart, N. J. . . .	Columbia City. .	R. D	Webster, M. W. . . .	South Whitley .	R. D
Koontz, S. . . . .	Laud . . . . .	R. D	Webster, D. E. . . .	Larwill . . . . .	R. D
Lawrence, I. E. . . .	Columbia City. .	R. D	Wenger, N. R. . . .	Coesse . . . . .	R. D
Linville, D. G. . . .	Columbia City. .	R. D	White, F. . . . .	Laud . . . . .	R. 3
Linville, L. M. . . .	Cherubusco . . .	R. D	Williams, C. S. . . .	Columbia City. .	R. 10
Magers, F. M. . . .	Cherubusco . . .	E. 10			

Regular, 22; Homeopathic, 1; Eclectic, 2.

## RECAPITULATION.

Regulars. . . . .	3,255
Eclectics. . . . .	513
Homeopathics . . . . .	187
Physio-Medicals . . . . .	127
Not reported. . . . .	255
Total. . . . .	4,337



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## PART SECOND.

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# PROCEEDINGS

OF THE

## National Conference of State Boards of Health

AT THE

THIRD ANNUAL MEETING,

HELD AT TORONTO, CANADA, OCTOBER 4, 1886.

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INDIANAPOLIS:

WM. B. BURFORD, PRINTER AND BINDER.

1887.



## NATIONAL CONFERENCE STATE BOARDS OF HEALTH,

TORONTO, ONTARIO, OCTOBER 4, 1886.

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The third annual meeting of the Conference of State Boards of Health was held in the parlors of the Queen's Hotel, Toronto, Ont., October 4, 1886. The meeting was called to order by Dr. G. P. Conn, Secretary. The President, Dr. J. N. McCormack, not being present, Dr. H. B. Baker, of Michigan, was chosen President *pro tem*.

The minutes of the last meeting were read and accepted.

Dr. William Oldright, chairman of the local sub-committee, was introduced and in a very happy manner welcomed the members to the city. He hoped if anything that would be conducive to their enjoyment while in the city had been left undone that they might be reminded of it.

Dr. H. P. Walcott, President State Board of Health of Massachusetts, suggested the roll-call of States, which was as follows:

Alabama.

Arkansas.

California, Dr. H. S. Orme.

Colorado.

Connecticut, Dr. C. A. Lindsley, Dr. R. S. Goodwin.

Delaware.

Florida.

Georgia.

Illinois, Dr. John H. Rauch.

Indiana, Dr. Charles N. Metcalf, Dr. James F. Hibberd.

Iowa, Dr. J. F. Kennedy.

Kentucky, Dr. J. N. McCormack.

- Louisiana, Dr. Joseph Holt, Dr. L. F. Salomon.  
Maine, E. C. Jordan, C. E., Dr. F. H. Gerrish.  
Maryland, Dr. John Morris.  
Massachusetts, Dr. H. P. Walcott, Dr. S. W. Abbott, Dr. E. U. Jones.  
Michigan, Dr. J. H. Kellogg, Dr. H. B. Baker.  
Minnesota, Dr. Charles N. Hewitt  
Mississippi.  
Missouri.  
New Hampshire, Dr. G. P. Conn, Dr. Irving A. Watson.  
New Jersey, Dr. Ezra M. Hunt.  
New York, Dr. Alfred Mercer.  
North Carolina.  
Ohio, Dr. D. H. Beckwith, Dr. C. O. Probst, Dr. W. H. Cretcher.  
Pennsylvania, Dr. E. W. Germer, Dr. Benj. Lee, Dr. David Engleman.  
Rhode Island, Dr. Charles H. Fisher.  
South Carolina, Dr. J. R. Bratton.  
Tennessee, Dr. J. Berrien Lindsley, Dr. G. B. Thornton, Col. D. P. Hadden, Dr. J. D. Plunkett.  
Texas.  
Virginia.  
Vermont.  
West Virginia.  
Wisconsin, Dr. J. T. Reeve.  
District of Columbia.  
Dominion of Canada, Dr. F. Montizambert, Dr. Wm. S. Harding.  
Province of Ontario, Dr. C. W. Covernton, Dr. William Oldright, Dr. P. H. Bryce, Dr. J. J. Cassidy.  
Province of Quebec, F. N. Boxer, C. E.  
Manitoba, Dr. Wm. R. D. Sutherland.

It was moved and adopted that papers be limited to twenty minutes and discussions to ten minutes.

Mr. E. C. Jordan, C. E., member State Board of Health of Maine, read the following paper by Dr. A. G. Young. He stated that the proper title of the paper was "A Comparative View of Sanitary Laws:"



## A COMPARATIVE VIEW OF SANITARY LAWS, AND WHAT CHANGES ARE NEEDED IN THOSE OF MAINE.

An examination of the public health laws of the various English speaking peoples shows unmistakably in many directions the moulding influence of the few earlier models of this kind of legislation. It shows also, among the laws, many points of difference and various degrees of excellence. A law has been defined by some of our jurists as the expression of a want. These wants, which have found utterance in the language of our statute books, it is quite conceivable, have not been found to be the same over the whole length and breadth of the many degrees of longitude and latitude. As the want has differed, so shall we find the expression of the want to be dissimilar. But more frequently, undoubtedly, the dissimilarity in our sanitary enactments has been due to other causes; to the slighter or more careful study which the makers of legislative bills have given to the needs of the State; to the differences in composition of Legislatures as far as intelligence regarding sanitary matters is concerned; to the more or less advanced state of preparedness of the general public for improved sanitary laws, and often, undoubtedly, to the correct or incorrect appreciation of the state of the public mind by makers of bills or legislative enactors of them.

In a few of our States there has lately been an attempt to codify and improve the scattered enactments and to make the laws more in conformity with the clearly-felt needs of modern sanitation, and some of these it is a pleasure to read.

But in most of our States the existing legislation is well characterized by the expression, "tumbled up;" it has been done piecemeal, and in almost all directions there is a reverential clinging to antiquated forms, which in this age, for effectiveness and utility, are as much out of place as is the wooden plow of our Aztec neighbor.

In my own State, which was originally a part of Massachusetts, the public health laws were copied almost without change from those of the mother State. For instance, almost everything which we have relative to the important matter of the management of the contagious diseases we got from an act approved March 10, 1821, entitled, "An Act to Prevent the Spreading of the Small-pox and other Contagious Diseases." This was copied without change from the Massachusetts law of that time, and this Massachusetts law was passed by the General Court of the Commonwealth June 22, 1797.

Furthermore, a large part of this Massachusetts law was a transcript of the old Colonial law. In an act passed one hundred and eighty-five years ago, in the reign of William IV, we read:

"Sec. 3. That, if need so require, any two justices of the peace may make out a warrant, directed to the sheriff of the county or his deputy, or constables of the town or place where any such sick person or persons shall be, requiring them or any of them, in His Majesty's name, with the advice and direction of the selectmen of the same, to impress and take up convenient housing, lodging, nurses, tendance and other necessaries for the accommodation, safety and relief of the sick."

This venerable law, handed down from the early colonial times to the newly erected Commonwealth, and by her in later years bestowed as a part of the legal dowry of our own State, where it remains intact, is a fitting testimonial of the sterling good sense possessed by our early legislators, and may be deemed a reflex of the sanitary knowledge and of the methods in those times of dealing with contagious diseases and the question of quarantine; but standing, as it now does, without amendment and without change, save to be shorn of its antiquated phraseology, it is a sorry index of the needs of this latter half of the current century, and a very inefficient piece of legal machinery for dealing with many of the sanitary problems as they now present themselves to us.

In the following very incomplete comparative view of the health laws of some of our states, together with those of England and the Province of Ontario, the presentation will mostly be made under four separate heads, viz:

- State Boards of Health,
- Local Boards of Health,
- Nuisances, and
- Contagious Diseases.

#### STATE BOARDS OF HEALTH.

A marked difference exists in various State or central boards of health in regard to their powers and duties. The role of some of them, as defined by the legislative acts establishing them, would appear to be hardly more than educational and advisory. Examples of such boards with restricted executive powers are those of Maine, Rhode Island, Connecticut, Indiana and Michigan. Some of these, notwithstanding their limited jurisdiction, have done excellent sanitary work.

To other boards their legislatures have delegated a certain share of law-making power, thereby, under certain circumstances, or in certain emergencies, increasing their effectiveness and usefulness. The law of Illinois defining the powers of the Board says that it "shall have authority to make such rules and regulations and such sanitary investigations as they may, from time to time, deem necessary for the preservation or improvement of public health; and it shall be the duty of all police officers, sheriffs, constables and all other officers and employes of the State, to enforce such rules and regulations."

"Under this section, says the Attorney-General, broad duties devolve upon the State Board of Health, and ample power is given to enable them to discharge their duties. They not only have the right, but it is their duty, to make any and all rules and regulations which they deem necessary to preserve the public health. Such rules and regulations, when promulgated, have the force and authority of law, and are to be enforced, if necessary, by the entire power of the State."

The same powers are given to the Iowa Board in the same words, and by a recent enactment similar powers have been granted to the New Hampshire Board. In Arkansas, "At any time the Governor of the State may require the State Board of Health to examine into nuisances or questions affecting the security of life and health in any locality, and in such case the said Board

shall have all necessary powers to make examinations and shall report the result thereof to the Governor." In accordance with the report of the Board the Governor may declare the matter or thing under consideration a nuisance, and is granted the necessary powers to have it changed, abated or removed. New York, in 1882, adopted the same as an amendment to her law.

In England the powers and duties of the local government board are various.

It acts in many cases as a board of appeal; the by-laws of the local authorities must be submitted to it for approval; it may from time to time make, alter or revoke regulations for the prevention of contagious diseases; it may require any two or more local authorities to act together, or for various purposes may form two or more districts into a united district, or may unite two or more districts for the purpose of appointing a medical officer of health; it may by provisional order, dissolve any local government district or merge it into some other urban or rural district; it may invest a rural authority with the powers of an urban authority; it may order and compel the local authority to undertake and contract to clean the streets, and remove and dispose of garbage; it may, when a local authority is in default in performing its duty, make an order and enforce it by writ of mandamus if necessary, or appoint an agent to do the duty.

Some of our American State and provincial legislatures have done well in drawing freely from some of the better parts of the English law. Minnesota and Ontario have adopted, with slight changes, the following from the English law. "Whenever any part of England appears to be threatened with or is affected by any formidable epidemic, endemic or infectious disease, the local government board may make, and from time to time alter and revoke regulations for all or any of the following purposes; (namely :)

- "(1.) For the speedy interment of the dead; and
- "(2.) For house to house visitation; and
- "(3.) For the provision of medical aid and accommodation, for the promotion of cleansing, ventilation and disinfection, and for guarding against the spread of disease."

Among other commendable points in some of the laws establishing American boards may be mentioned the power, as far as it may be conferred by State legislative authority, of inspecting, and, if necessary, detaining steamboats, railway trains and other conveyances when necessitated by the existence of contagious diseases, as in Ontario, West Virginia and New Jersey; of appointing sanitary police as in Ontario; of appointing inspectors and assigning them "to such duties as the interests of the public health in any part of the State may require," as in New Jersey; of ordering "nuisances, or the cause of any special disease or mortality, to be abated and removed," as in Pennsylvania; the appropriation of an epidemic or emergency fund, as in New Hampshire, Connecticut, New Jersey, Maryland, Minnesota and Illinois; the giving to the State Board local jurisdiction co-ordinate with the powers of the local Board when infectious diseases exist, as in Massachusetts; and the investing of the State Board with the powers of Justices, in making examinations, as in Minnesota and Ontario.

## LOCAL BOARDS.

In regard to local Boards of Health there is the question of the unit of local administration. Some contend that it should be the town or township, others that it should be the county. For some of the States county boards alone would be manifestly inappropriate when we take into consideration the size of some of the counties. In the State of Maine there are counties 125 or 130 miles in length, and one with an area almost large enough to make one Connecticut and two Rhode Islands.

There are various other questions which are of practical importance in forming local Boards, and which have been answered very differently by the laws of different States.

What shall be the number of members on the Board?

England answers by letting the local government board determine in each case.

In Ontario, the number in townships or incorporated villages is five, in towns with a population less than 4,000 it is five, if more than 4,000, nine.

In Maine and Massachusetts, three to nine.

New Jersey has five to seven.

Delaware, three to seven.

Illinois, three on township boards.

Michigan, four.

New York, in cities, seven; villages, three to seven.

California, five, and in Pennsylvania, in cities, the same.

Minnesota, not less than three.

Who shall constitute the board?

In England this depends largely upon property qualifications.

In Rhode Island, Indiana, Michigan and Iowa the municipal officers constitute an ex-officio board, and in Indiana and Kansas the County Commissioners form an ex-officio county board.

In Maine and Massachusetts, when the town fails to elect a board, the municipal officers are the board.

The board consists in Connecticut of the justices of the peace and the selectmen.

In New York, in cities and villages, the board shall not be ex-officio, neither shall any of the members be connected with the city council, or on the board of village trustees. In towns the supervisor, justices of the peace, town clerk and one elective member.

In Illinois the township board consists of the supervisor, assessor and town clerk.

In Delaware there shall be at least one physician, and when there is a port physician he shall be an ex-officio member.

In Ontario, in townships and incorporated villages, the reeve, clerk and three ratepayers; in towns of less than 4,000, mayor, clerk and three ratepayers; in city or town of more than 4,000, the mayor and eight rate-payers.

Pennsylvania, in cities, the mayor as ex-officio president and four appointed members; in boroughs the council forms an ex-officio board.

How shall the board be chosen—by election or by appointment?

We find it is by election in England.

In Maine and Massachusetts it is by election in town-meeting in towns; in cities the board of health is appointed by the municipal council.

In New York, in cities, appointed by Council upon nomination by mayor; in incorporated villages, appointed by trustees; in towns, the one elective member is elected by the ex-officio members.

In New Jersey, Pennsylvania, Delaware and California, appointed by the common council.

In West Virginia, nominated by the County Court and appointed by the State Board.

In Kentucky, county board appointed by State board.

Shall the choosing of the board be optional or obligatory?

Outside of the States which have ex-officio boards, the law of Ontario, New York, Delaware, Minnesota and West Virginia, says "*shall*," In Maine, Massachusetts and Pennsylvania it says "*may*."

In Tennessee it says "*shall*" for every municipality of 5,000 or over.

What provision or penalty other than providing for an ex-officio board when a board is not chosen?

There is none in most of the States.

In Ontario the provincial board may appoint the appointive members.

In New York the board is appointed by the county judge.

In Pennsylvania the State board may act.

In West Virginia vacancies may be filled by the State board upon nomination of the county court.

What shall be the term of office?

The law says one year in Ontario, Maine, Massachusetts, Delaware and in villages and towns in New York, and in States having ex-officio boards. Two Years in West Virginia and Pennsylvania.

Three Years in New England, Minnesota, Ohio and in the cities of New York.

Two years in Kentucky for the county board.

In New Jersey it shall not exceed four years.

In California at the pleasure of the appointing power.

How many members shall retire yearly?

In Ontario, Maine, Massachusetts, and in the States having ex-officio boards, the whole board retires annually, in most cases.

In England, as nearly as may be, one-third shall go out of office yearly.

In New Jersey, in cities of more than 100,000 inhabitants, not more than three.

In Ohio, two.

In New York and Pennsylvania, in cities, two.

In Minnesota, in cities and villages, one.

What provision or penalty when the board makes default of duty?

In England the local government board shall make an order limiting a time for the performance of their duty. Then if not done it may be enforced by a writ of mandamus, or the local government board may appoint some person to perform such duty.

In New York the performance of the duty may be enforced by a writ of mandamus at the instance of the State Board of Health, its President, Secretary or any member thereof.

In Pennsylvania "The State Board of Health shall have power and authority to order nuisances or the cause of any special disease or mortality to be abated and removed," etc.

In Minnesota "any member of any Board of Health or Health Officer, who shall neglect to perform the duties required of him under the provisions of this act, or any other acts relating to the duties of the Boards of Health or Health Officers of this State, or who shall neglect or refuse to obey any reasonable directions as to infectious diseases as shall be directed by the State Board of Health, shall be liable, upon conviction in any court having competent jurisdiction, to be fined in a sum not less than twenty-five (\$25) dollars nor more than one hundred (\$100) dollars and shall become disqualified from holding the office of a member of the Board of Health."

By whom shall the local rules, regulations or by-laws be made?

In England by the local authority and approved by the local government board

Ontario, made by the Legislative Assembly and in force in every municipality till altered by the municipal council.

Maine, except in cities, must be adopted by the town in open town meeting.

New Hampshire, made by health officers and approved by the selectmen.

In Pennsylvania, by the Board of Health when the necessary powers are granted by the council.

Indiana, by the board under the direction of the State board.

In most of the other States this power lies with the Local Board.

#### NUISANCES.

When an unsanitary condition or nuisance comes under the cognizance of the local authority, a preliminary notice to abate is usually served although not always a legal requirement. In regard to the further proceedings, the law says:

In Ontario, Maine, Massachusetts, Delaware, Michigan, Iowa and most of the other States, that the local board *shall* or *may* abate at the expense of the owner.

In New Jersey may abate in a summary manner, or file a bill in a court of chancery for an injunction.

The provisions regarding the important matter of the resulting costs and expenses of abatement are in the English law that the "costs shall be deemed money paid for the use and at the request of the person on whom the order is made." The costs may be recovered in a summary manner or in any county

or superior court. Costs recoverable from owner may be recovered from the occupier, to be deducted out of the rent. The court shall have power to divide costs, expenses and penalties.

In Ontario, the board may recover costs by action or distress. In case of the non-payment thereof the same shall be recovered in like manner as municipal taxes.

In New York the board may sue and recover costs of abating. If the execution is not satisfied the judgment shall be a lien upon said premises, having preference over all other liens or incumbrances whatever.

In New Jersey the board shall have the right to recover by action of debt the expenses incurred, or, "if it shall be deemed inexpedient to bring such suit, they may present a bill to the local municipal authorities, and such bill shall be paid by the municipal government."

In Illinois the board shall cause suit to be brought under the criminal code.

In Iowa costs to be recovered by civil action in the name of the State.

Regarding the power of entry to examine or abate nuisances the law of England says: "The local authority or any of their officers shall be admitted. If admission is refused, any justice may issue an order of admission."

This is generally the law in our States, excepting in some it is said that the justice shall issue his writ.

In case of default of duty of the local board, what redress for the individual or the community against nuisances?

In England the individual may make complaint to a justice. The local government board may authorize any officer of police in the district to abate.

In Ontario the provincial board may investigate and, if necessary, abate.

In Massachusetts appeal may be made to the County Commissioners.

In New York the State Board may make an order and enforce it.

In Pennsylvania, may be enforced by the State Board.

In Maine, "any person injured may maintain an action on the case for his damages."

#### CONTAGIOUS DISEASES.

An examination of modern statutory enactments for the prevention and restriction of the contagious diseases will show that, as can also be found in the laws of a century ago, there is pretty uniformly provision of some kind made for the notification of the arrival or existence of an infected case, for isolation in hospital or otherwise, and usually for the imposing of certain obligations upon householders and physicians.

We do not, however, so frequently find the law taking cognizance of many other things which the modern health officer knows is often indispensable to success.

For example, the laws of many of the States are deficient in provisions regarding the nurses and attendants upon the sick, and the danger of their transporting infection to others. The law of Ontario, however, is explicit on this point:

"Except the attending physician or clergyman, no person affected with small-pox, scarlet fever, diphtheria or cholera, and no person having access to any person affected with any of the said diseases shall mingle with the general public until such sanitary precautions as may be prescribed by the local board or attending physician shall have been complied with."

So is the Minnesota law excellent in this direction.

Provisions for the restriction of the movements of persons and things, generally, for the purpose of preventing the transmission of contagion are virtually absent in some of the States, but in other directions the laws are commendable.

England has this:

"Any person who—

"(1.) While suffering from any dangerous infectious disorder willfully exposes himself without proper precautions against spreading the said disorder in any street, public place, shop, inn or public conveyance, or enters any public conveyance without previously notifying to the owner, conductor or driver thereof that he is so suffering; or

"(2.) Being in charge of any person so suffering, so exposes such sufferer; shall be liable to a penalty not exceeding five pound; and a person who, while suffering from any such disorder, enters any public conveyance without previously notifying to the owner or driver that he is so suffering, shall in addition be ordered by the court to pay such owner or driver the amount of any loss and expense they may incur in carrying into effect the provisions of this Act with respect to disinfection of the conveyance."

Maryland has this section of the English law, and the following admirable one appended to it:

"Any person, parent or guardian, or other party, who carelessly carry about children or others affected with infectious diseases, or who knowingly or willfully introduce infectious persons into other persons' houses, or permit children under their care to attend any school, theatre, church or any public place where they will be brought in contact with others, shall be liable to a penalty not exceeding one hundred dollars for each and every such offense."

Michigan and Minnesota have also excellent provisions in this direction.

Disinfection is by no means a new word, yet it is too modern to be found in the law of some of the States.

The law of Maine (Chapter 14, Section 9) speaks of "purifying" infected articles, but whether this shall be with the mild methods of the washer-woman or by the more effectual germicidal processes the law does not say.

The English law says on this point:

"Where any local authority are of the opinion, on the certificate of their medical officer of health, or of any legally qualified practitioner, that the cleansing or disinfecting of any house or part thereof, and of any articles therein likely to retain infection, would tend to prevent or check infectious disease, it shall be the duty of such authority to give notice in writing to the owner or occupier of such house or part thereof, requiring him to cleanse and disinfect such house or part thereof, and articles, within a time specified in such notice."

Ontario and Maryland have adopted this section, and so has Minnesota, with an improvement including buildings, cars, vessels and vehicles in the same provision.



Satisfactory regulations regarding infected clothing are not found on the statute books of most of the States.

In England "Any person who gives, lends, sells, transmits or exposes, without previous disinfection, any bedding, clothing, rags or other things which have been exposed to infection from any such disorder, shall be liable to a penalty not exceeding five pounds."

It is further provided that "any local authority may direct the destruction of any bedding, clothing or other articles which have been exposed to infection from any dangerous infectious disorder, and may give compensation for the same." And "any local authority may provide a proper place, with all necessary apparatus and attendance, for the disinfection of bedding, clothing or other articles which have become infected, and may cause any articles brought for disinfection to be disinfected free of charge."

Ontario, Maryland and Minnesota have the same, or very nearly the same.

Particularly praiseworthy is the law in England, Ontario and Maryland regarding infected rooms and the liabilities of those who let them without adequate disinfection, and regarding infected vehicles and the requirements for their disinfection.

In the laws of Maine there is nothing to protect the public from the danger of infection in the burial, disinterment and transportation of the bodies of those dead of infectious diseases.

Commendable features of the law of Massachusetts and Michigan are provisions for the protection of schools from the contagious diseases.

What I have said I have entitled "A comparative view of sanitary laws and what changes are needed in those of Maine." As a comparative view of the subject it is very imperfect for not including the laws of all the States, and probably for frequent errors and misapprehensions.

As treating wholly of statutory laws in contradistinction to provisional rules and regulations made by virtue of delegated legislative power, it does an injustice to certain States, particularly to Illinois, whose sanitary laws are largely of this kind. The object has not been to teach, but to suggest, with the hope of learning from the resulting discussion regarding the changes needed in the laws of Maine.

Dr. Ezra M. Hunt, Secretary State Board of Health of New Jersey, said he could not see how any gentleman could prepare a paper of this character without submitting it to the different State Boards of Health for verification. He noticed several important errors in it, yet considered the general plan to be excellent, and thought it would be valuable to members of State or Local Boards of Health.

Dr. H. P. Walcott, President State Board of Health of Massachusetts, recognized the value of the paper, but thought it should be submitted to the State Boards of Health for revision, and moved that the subject be referred to a committee of which Dr. Young

should be chairman, to report a codification of the health laws of the several States and Provinces at the next meeting of the Conference.

Dr. H. B. Baker, Secretary State Board of Health of Michigan, did not agree with the idea that State Boards should be mandatory. Legislative and judicial functions should be abandoned

Dr. Cassidy, of Toronto, said he hoped the committee would consider the money side of the question. In school matters it is obligatory that the money which the school trustees require shall be furnished, but in health matters it is not so. He said on his side of the line the question is, "Where are the funds coming from?" That one point he would like to see a comparison of in the various States and Provinces.

Dr. C. W. Covernton, Chairman Provincial Board of Health, considered it of the utmost importance that State Boards should have executive authority.

The motion to submit the question to a sub-committee was adopted, and Dr. A. G. Young, of Maine, Dr. H. B. Baker, of Michigan, and Dr. William Oldright, of Toronto, were appointed that committee. (Dr. McCormack in the chair.)

The following resolutions were then taken up:

From Pennsylvania—

"What precautions should be taken to prevent the bodies of deceased persons from becoming a source of injury to the public health during transportation on lines of public travel?"

From Michigan—

"1. *Resolved*, That the bodies of persons dead from the following named diseases should not be transported outside the jurisdiction of the health authorities in which the deaths occur: Diphtheria, scarlet fever, small-pox, cholera, yellow fever, and typhus fever."

"2. *Resolved*, That persons sick with diphtheria, scarlet fever, small pox, cholera, yellow fever, typhus fever, measles, or whooping cough should not be transported outside the jurisdiction of the health authorities in which the sickness occurs.

"3. *Resolved*, That bodies of persons dead from diseases other than those mentioned in Resolution No. 1 should not be transported except by the permission of the health officer of the locality in which

the deaths occur; and in case of communicable diseases other than those named in Resolution No. 1, notice should be given to, and whenever practicable permission should be received from, the health officer of the locality to which it is desired to take the body.

"4. *Resolved*, That a permit for the removal of a dead body should be given only on assurance of its having been properly embalmed, suitably prepared, by being surrounded with disinfectants, or enclosed in a hermetically sealed metallic case."

Dr. Benjamin Lee, Secretary of the State Board of Health of Pennsylvania, said that quite unexpectedly he discovered a few days before leaving home that he was "down on the programme" for a paper on this important subject. The documents which the chairman of the "Committee on the Supervision of Travel and Traffic," Dr. Joseph F. Edwards, had collected in reference to it from different State Boards of Health in compliance with a suggestion from the Secretary of this Conference, were all in the possession of the latter and at his house out of town, so that it was quite impossible to fulfill the task assigned him. He was, however, so much of the opinion that formal papers are not desirable at this Conference and that a free interchange of experiences and opinions in regard to the work in which we are engaged in common, unhampered by long and labored essays, will tend so much more directly to our edification, that he felt the less inclined to offer an apology. His attention was first called in an official way to the subject of the disinterment of dead bodies which had been the subjects of infectious diseases by a circumstance of so peculiar a nature that he thought he would not be wasting time by relating it. He continued as follows:

"Very soon after the establishment of our State Board of Health, I was waited upon by a lawyer from one of the towns in the interior of the State to know whether the board would sanction the exhumation and removal of the body of a man who had died of small-pox. The local Board of Health had forbidden the exhumation, but the widow was extremely anxious for the removal and he had come on her behalf to inquire whether we could not reverse their decision. I replied that the object of the State board in its relation to local boards would always be to uphold them in all their efforts to protect the public against infectious diseases, and not to weaken their authority, and that in this instance we should certainly deem it our duty to sustain their ruling. I subsequently learned the history of this case and felt happy in having decided as I had done. It appeared that the deceased was a lawyer of some prominence who was thoroughly imbued with the anti-vaccination heresy. In public and in private, on the street, in the social circle

and through the public press, all his efforts were concentrated, both by denunciation and ridicule, to the end of discouraging his fellow citizens from subjecting themselves or their children to this operation. Finally he was taken sick and his physician announced to him that he had small-pox. The case proved to be confluent, of the worst type, and he died in great agony. Fortunately his reason was spared him long enough to enable him to understand and repent of his long course of crime. Who knows how many lives he may indirectly have sacrificed by his wicked presumption before he committed suicide himself. And it was this horribly infected body of a man who had spent his best energies in exposing his fellow beings to infection, which his widow now wished, in order to gratify a mere sickly sentimentality to render a new center of contagion, and thus add still other victims to his list. I was thus deeply impressed with the importance of placing this matter under strict control; but I felt that unless other States were willing to co-operate but little could be accomplished for the protection of the people of my own. It was with this object in view that I requested the Secretary of the Conference to give the subject a place on the programme for discussion.

"At the meeting of our board in May last, after conferring with a representative of the undertakers of Philadelphia in order to discover what precautions were usually taken in that city in preparing the dead for transportation, it was considered wise to obtain information on a wider scale from the health authorities of other States, and the subject was referred, as already stated, to the "Committee on the Sanitary Supervision of Travel and Traffic," for further investigation. This committee issued a circular to the Boards of Health of all the States, inquiring what regulations, if any, were in force in their respective domains. Replies to this circular were received from twenty-one States. From these it appears that nine of the twenty-one, namely California, Delaware, Georgia, Louisiana, Maine, New Jersey, Ohio, Rhode Island and Tennessee are entirely without either State Board of Health regulations or statutory provisions in reference to this matter. To these it would probably be fair to add a majority of the sixteen from which no answers were received. These are Arkansas, Colorado, Florida, Illinois, Maryland, Minnesota, Mississippi, Nebraska, Nevada, North Carolina, Oregon, South Carolina, Texas, Vermont, Virginia, West Virginia.

"The twelve States in which either Legislature or the State Board of Health, or both, have thought the subject of sufficient importance to make it necessary to exercise some control are therefore Alabama, Connecticut, Indiana, Iowa, Kentucky, Kansas, Missouri, Michigan, Massachusetts, New Hampshire, New York and Wisconsin. In six of these, namely, Alabama, Kansas, Kentucky, Iowa, Indiana and Missouri, the conservative course has been adopted of absolutely prohibiting the transportation of any body that has died of smallpox, Asiatic cholera, typhus fever or yellow fever.

"The bodies of those dead from diphtheria, scarlet fever, typhoid fever, erysipelas, measles, or other contagious or infectious disease, except such as have been named, must be prepared for shipment by being wrapped in a sheet thoroughly saturated with a strong solution of chloride of zinc, in the proportion of one-half pound of chloride of zinc to one gallon of water, and then inclosed in an anti-septic interment sack hermetically sealed, before being placed in the coffin, unless the coffin used is air-tight.

"All other dead bodies may be transported, provided they are enclosed in air-tight wooden boxes lined with zinc, copper or lead; or in airtight cases. If any other form of coffin is used, the body must be inclosed in an hermetically sealed anti-septic interment sack.

"In the State of Indiana, the restrictions in regard to bodies which have not died of a contagious or infectious disease are wisely made less rigid during the cold season, from November 15th to May 1st. The model adopted by most of these States appears to have been the admirable series of 'rules of the Chicago, Rock Island & Pacific Railway Co.' The Medical Association of the State of Alabama, which is also the State Board of Health, has contented itself with simply adopting it as a whole.

"In the six remaining States which have adopted 'rules' or passed laws, the transportation of all bodies dead of whatever form of contagious disease is permitted under certain restrictions, requiring disinfection, embalment, antiseptic envelopes, hermetical sealing and the like, insisted on with more or less strictness. Many of the regulations mention an "antiseptic interment sack." To insist on the use of this is unwise. In the first place it is liable to be punctured or ruptured, and then ceases at once to be hermetically sealed; and, in the second, it is a patented article, and therefore involves an unnecessary outlay. The plan authorized by the Board of Health of the City of Philadelphia commends itself as being at once effective and inexpensive. The coffin, of whatever kind, unless it be an absolutely secure metallic coffin or casket, is placed in a tight wooden box lined with felt, which has been recently smeared with pitch. The cover of this box is provided with a flange near the edge which sits in a groove on the edges of the box. This groove contains a strip of India rubber. When the cover is screwed tightly down upon this rubber strip the box is sealed as hermetically as a preserve jar. The object in framing all regulations of this kind should be to protect the public health with the least possible interference with private rights and the least possible involvement of expense. I cannot but regard the absolute prohibition of the disinterment or transportation of the bodies of those who have died of the first four named intensely infectious and malignant diseases as eminently wise. When I remember that I have held in my hand a grain of wheat taken from an Egyptian mummy, three thousand years old, and that a similar grain to that has been planted and has germinated, and when I remember that we are still in ignorance as to the length of time that the germ of any of these infections may retain its vitality, I feel that it is not wise to run the risk of saving these germs in half a dozen different States for the sake of gratifying a sentiment which is, after all, but a survival of the pagan worship of the dead. The importance of uniformity in such regulations can not for a moment be questioned. When all the States have adopted a uniform system, and a uniform permit, the transportation of a body from State to State, if it has been properly prepared at the place of death for such transportation, will take place with perfect ease and all possible celerity, all the vexations, delays and expensive details which are now so apt to occur at the terminus of every road and the border of every State being done away with. And at the same time, it being thoroughly understood that certain requirements must be met, proper precautions will be taken at the point of departure, so that there will

be no risk of bodies arriving, as they have arrived in the past in the City of Philadelphia, coming from the extreme southern confines of our country in a state of such advanced decomposition that the lid of the coffin or box has been burst open by the expansion of the gases of decomposition.

"In order to bring the subject properly before the Conference I would move the adoption of the rules proposed by the delegation from Michigan, as they appear on the programme."

Dr. Wm. S. Harding, Quarantine Officer of St. John, N. B., said there was a matter he desired to submit to the Conference bearing upon this question. It was a matter that concerned the credit of the whole profession, and he would like the Conference to allow him to present it. [The matter being foreign to the executive work of Boards of Health it was thought that the matter came more properly before the American Public Health Association.]

The Chairman stated that the question before the house was the motion of Dr. Lee that the resolutions, with the proposed alterations, be adopted.

The Secretary read the resolution as amended.

Dr. S. W. Abbott, Secretary State Board of Health of Massachusetts, thought that the idea embodied in the resolution was a good one. He said they had just the idea of this in the law of his State under the statute of 1884, but he thought some of the provisions of the resolutions were rather arbitrary. It did not seem necessary that they should be applied to all bodies, especially those that had been dead for a space of years; that should be left to the jurisdiction of sanitary authorities. Persons who have been dead, and buried ten years in the ordinary manner, would cease to be a source of infection. The resolutions made no provision for this condition. The question of cremation is not considered. Does any one consider that the ashes of a man can be infectious in the slightest degree? His impression was that a person ill with an infectious disease was more dangerous to the public health than dead bodies. The fourth resolution was not definite enough: it says "that a permit for the removal of a dead body should be given only on an assurance of its having been properly embalmed, suitably prepared, by being surrounded with disinfectants, or inclosed in a hermetically sealed metallic case." Would you require this of all dead bodies, whether dead from communicable diseases or not? That should be definite. The method of embalming or preparing may

be left to the discretion of sanitary authorities. Certain cities have certain rules, and while the idea is an excellent one it is one of those things that may be modified.

Dr. Baker wished to make a motion, or request, that instead of taking the last resolution first, the resolutions be taken up in their order that each one might be discussed and amended. He would have some question himself on each one of them, and would move that the resolutions be considered in their order and adopted or rejected as the case might be.

The motion was adopted.

Dr. Baker said the resolutions had not been submitted to the Michigan State Board of Health; they were written by himself and were not the views of the State Board of Health. At the last meeting of the board when he read them over, one or two objected to the first resolution immediately; they did not want it passed, and he could not say himself that it should not be modified. Prof. Vaughan said at the last meeting that bodies might be transported without difficulty if they were properly prepared and he thought bodies might be prepared so they would not carry disease.

Dr. Ezra M. Hunt, Secretary State Board of Health of New Jersey, thought it doubtful if they should adopt these resolutions, and the first he would not be willing to vote for in its present form. He thought every State should give its permit and state that the body had been made safe for transportation, but hoped they would go slow, very slow in the matter. He agreed with Dr. Abbott that the danger is in the hermetically sealed metallic case. It is a very complicated question, and he believed that it should be left to State and municipal authorities.

Dr. G. P. Conn, President State Board of Health of New Hampshire, said that it seemed to be a matter in which each State had rules and regulations governing the special locality. In New Hampshire while they have no law so far as the State is concerned, there is an unwritten law in the regulations of railroads. They will not take any body whatever upon their trains until a certificate has been given stating that the person did not die of an infectious or contagious disease. In that way the whole subject is under control. It is expressly stated upon the authority of the attending physician, that the body did not die of contagious or infectious disease, and

until that is presented to the railroad authorities no body is taken upon the trains. Again, we have in New Hampshire a statutory law that no body can be interred until a permit has been granted, and that permit is on the certification of the attending physician, or in case no physician was in attendance during the last illness, a permit may be granted upon the representation of persons in attendance upon the deceased person or present at the time of death, therefore the registration of deaths has been brought down to an absolute certainty. There are large fines on any undertaker who buries any body before he has received this permit, and there are other parties who are fined if they aid or abet in any way in the burying of a body before the permit is granted.

Dr. Charles H. Fisher, Secretary State Board of Health of Rhode Island, thought the resolution should be referred to a committee for modification.

Dr. Hunt knew of no reason why the question should not be disposed of in a few minutes. The remarks of Dr. Conn showed that rules may be formulated. Railroad companies take a much more advanced stand upon this question than health authorities. The first resolution should be adopted as it stands. He was at a loss to understand the expression "mandatory" in connection with the conference. All that could be done was to advise. The question is asked, Is the body a source of infection after ten years? He took the ground that it is. If the seed of grain that has lain buried in Egypt for centuries, will germinate when placed under proper influences, why may not the disease germ after ten years convey disease? He would be in favor of adopting the first resolution.

Dr. Fisher thought that resolution had better be dropped out, as the same idea was embodied in the fourth resolution. Dr. Fisher's recommendation was adopted. The whole subject was referred to a committee consisting of Dr. Benjamin Lee, of Pennsylvania, Dr. Charles H. Fisher, of Rhode Island, and Dr. Samuel W. Abbott, of Massachusetts.

Next in order were the questions on vaccine culture, presented at the last meeting of the Conference, and in addition thereto—

"What breed or breeds of cattle are most desirable for such use?"

"Is a breed having fair skins and more delicate frames unfitted to become *vaccin ogenes*, through a liability to impress upon or include



within the virus yielded by them the germs of tuberculous disease, with the possibility of conveying the liability to such infection to a person vaccinated with virus from an otherwise normal animal of a breed such as has been indicated?"

In connection with the subject, Dr. Conn read the following paper by Paul Paquin, Professor Comparative Medicine, etc., Medical School and Agricultural Department Missouri State University:

#### HORSE-POX—COW-POX.

The affections bearing that name are one and the same. I will, therefore, speak of them as one. It is a contagious, virulent, inoculable malady, characterized by the formation of vesicles, pustules, etc., in certain regions of the body, including the mucous membranes. Owing to its power of transmission from animal to animal, animal to man, and vice versa, and also from man to man, thereby conferring immunity against *small-pox* or *vaccination*, it is a disease of the greatest interest to the public and the medical world. Consequently a study of its true nature can never be carried too deeply. During the last years this study has made great progress. The theory of disease germs brought new light on the subject, and an almost complete revolution has taken place, so far as the nature and origin of vaccine is concerned. Gluge, Pincus, Growitz, Kleber, Klebs, Chauveau, Duclaux, Tonssaint, Pasteur, Warlemont, etc., have lead the authority of their name to researches and publications, which have advanced our knowledge wonderfully. Let us review a few historical facts while we consider briefly the nature of this pustulous malady.

The vesicles of horse-pox or cow-pox contain a serous fluid, in which may be seen minute, transparent corpuscles, which are probably the crystals described by Gluge in 1838, and the nature of which was demonstrated later by Kleber and others. These corpuscles, it is now conceded by authorities, constitute or contain the active principle of infection, and are considered as virulent parasitic micro-organisms. Indeed, their invariable presence in the vesicles in all their stages; their regular form or shape and mode of grouping together four by four, as a rule; their comparison with other kinds of infectious microbes justify this opinion. Whether in man, in the horse or in the bovine specie, we can always find in the vesicles these organic bodies, and they always appear as perfectly *spherical micro-cocci*. Inoculation with fresh vaccine matter deprived of these cells or corpuscles by laboratory filtering process *proves inactive*. This has been conclusively demonstrated by Kleber, and Chauveau, M. D., V. S., late Director of the Veterinary School of Lyons. The bacteriologists have made wonderful strides, and now the part that some microbes play in contagious maladies is beyond reasonable dispute.

At present no one is known, however, to have succeeded in cultivating satisfactorily the germs of vaccine or of small-pox outside the animal body, as

is done with the germs of some other contagious affections, such as anthrax, hog cholera, chicken cholera, septiceamia, etc. No pure media has been discovered which contains the elements necessary to their healthy growth and multiplication. If ever this occurs—and I feel sure it will before long—science will have accomplished a glorious task, for it will have done away with the process of producing vaccine in the animal system; a field which may be infected by other virus of a deadly nature to man, and which, therefore, are fields which can safely be tilled only by those who have sufficient knowledge of comparative pathology in contagious diseases.

The *micro-cocci* of vaccine resembles physically that which is found in small-pox itself. Yet there is surely some difference in their nature, for the results they give by inoculation or by contamination in man or beast vary to a certain extent. That point of difference has escaped the scientists in their researches. Still it is nothing that should cause any doubt on the generally accepted doctrine that the microbe is the cause of the disease, because if we have failed so far to elucidate such details in the germs or seeds of the world, invisible without most powerful optics, we have also failed to elucidate or explain the very same thing in the organisms which we see and appreciate with the naked eye. "Who can tell," says Warlemont, "the kernel of a sweet almond which gives us a nourishing fruit with that of the bitter almond which contains the most potent poison? Who can tell among two poppy seeds that which will give birth to a red flower? Some difference must exist in the molecular arrangement of those organic substances."

Again, if we go into the animal kingdom, could one tell which of two animal spermatozoa may engender a white or colored individual?

The growth of the germs of vaccine takes place first in the "*rete of malpighii*." It is there that they seem to find in more abundance the elements necessary for their existence, development and multiplication. Perhaps it is because a plastic media is not a suitable soil for them, for Pincus observed that in the first day their multiplication is very slight in the zone of inoculation where exists naturally a more active circulation and a certain reaction due to the operation, whilst on the contrary their proliferation may already be considerable deeper in the tissues where cells were carried, probably by the lymphatic circulation. Then, when this reaction has subsided, the second day, they increase much more rapidly, even in the zone of inoculation.

The pustule of vaccine has an infractuious cavity containing leucocytes, hematies, debris of nucleus and microbes irregularly disposed in masses—some microbes in groups of fours as already stated. There is nothing in the anatomical and pathological structure of the pustule and the physical appearance of the microbe in vaccine which can afford one to find a difference with the pustule of small-pox. Their histological disposition are analogous.

#### VACCINE AND VACCINATION.

Vaccination was discovered, lost, and found again before it was in general practice.

Variola of man was imported into Syria, Palestine, Africa, by the *Sarrazins* (French word); into Spain by the *Maures*; into France by the Crusaders, and into the islands and the New World by European vessels, and

caused serious loss of human life in all times. Vaccination, of course, was not known then; but, however, as far back as the XVI. century a preventive of this nature was put in practice; it was *Variolization*—i. e. inoculation of small-pox virus itself. The Georgian and Circassian merchants variolized their slaves to save them from detrimental disfiguration by pox-marks. In 1670 this operation was introduced in Constantinople, and from there passed into England in 1730.

Cow-pox, on the other hand, was known in Persia, Holland, France, England, Ireland, Denmark, Norway, India and, it is said, in America also, from immemorial date; but the affection was not well known, nor understood, and its properties for preventing small-pox were totally ignored.

I need not recall to your memory that it is only in the latter part of the last century that the immortal Jenner, in *practicing variolization*, discovered people upon whom the action of the inoculated virus of small-pox remained without result. These persons, it was ascertained, had previously contracted cow-pox in milking cows. Jenner, struck by this coincidence, made investigations, and soon ascertained that cow-pox virus conferred immunity against small-pox. Such was the discovery of vaccination. Jenner, however, did not stop there; in pursuing his researches he discovered, besides, that cow-pox came from the horse. He observed cases of horse-pox transmitted to man and cows; on some farms he saw horse-pox transmitted to cows by feeders, herders and shoers. This disease of the horse he then named *sore heels*, *grease heels*, on account of the aspect of the pustules and their usual location at the extremities. But Jenner was not understood; his naming the disease *grease heels* lead many a medical observer and student astray, for there was, as there is now, another disease peculiar to the equine family which affects the limbs, and is called *grease*; but it is not inoculable—at least not to cattle.

Dr. Loy, in 1802, gave a description of the true horse-pox, and he termed it *constitutional grease*, in order to distinguish it from ordinary grease legs. He gives in that description and account of the eruption, and states very justly, that it does not occur simply on the extremities, but also on the mucous membranes, the nose, and sometimes even the body. Unfortunately, Mr. Loy's writings were totally ignored until about the year 1861. From the time of Jenner and Loy's labors the medical fraternity of Italy, France, Germany, etc., wandered uselessly until that year, although in 1860 a step in the right direction was made. Everywhere the origin of vaccine was searched for in *grease heels*, *quittors*, etc., but, of course, without benefits. The question became very obscure; confusion existed even among the physicians, and some advocated the existence of inoculable, non-inoculable *quittor* and *grease*. During that period, however, horse-pox had been observed, but not recognized, and it was termed *phlyctenoid herpes*, *aphthous stomatitis*, etc.

In 1860 a pustulous contagious disease broke out at Rieumes among horses; it was transmitted to eight mares by the use of a pair of hobbles, which had been applied on a first beast, whose pasterns were affected. The affection was then studied and described by Sarrans, a veterinarian of the locality. A young mare was sent to the veterinary school of Toulouse, where Mr. Lafosse thought he had to deal again with an acute case of *grease*. Inoculation of the matter to cattle undeceived him, however, for he thus obtained *cow-pox*,

which he reproduced on another cow, thence on a child. Mr. Urbain Leblanc, a noted veterinarian of Paris, went to Toulouse, and saw that the disease was different to *grease*, and, consequently, gave it another title. He called it "*maladie vaccinogene*"—which means vaccinogenous malady. At this epoch the academies of medicine began the discussion of the nature and origin of vaccine. It is then that Mr. Bauvier, at the Academy of Paris, produced Mr. Loy's writing of 1802. The question was not entirely cleared then, but researches continued, until finally, in 1864, thanks to Dr. Depaul and Dr. Bouly, a veterinarian, Professor of the Museum of Natural History and late President of the French Academy of Science, the long discussed subject was solved. It was proved beyond a doubt that cow-pox and horse-pox are one.

#### ANIMAL VACCINATION.

Notwithstanding the above historical lines, which have been transmitted to us, we can not say positively that animal vaccination is of very recent date. In fact we read narratives to the effect that Dr. Vy, of Elbeuf, practiced the operation vastly among calves with vaccine from the human body about the time of Jenner—Bavaria and Germany following suite. This was termed *retrovaccination*. The culture of true animal vaccine according to its present meaning, i. e., the culture of horse-pox or cow-pox through the bovine system, dates from 1800, when it was practiced in Nancy, France, by Valentine, and at Rheims by Duquenelle. Afterward it passed into Naples through the influence of Galbiati and then his pupil, Negri. But, as stated, it was only in 1864 that the practice truly took root in the world, after Palasciano, of Naples, had attracted the attention of the medical congress held at Lyons. From Naples it was introduced definitely into France in 1865 by Dr. Lenoix, and thence in Belgium by Dr. Warlemont. These two physicians established vaccine institutes, from which arose numerous others in Europe and America.

This method of procuring vaccine through the cattle system is a great benefit to humanity. It protects mankind against small-pox as effectively as humanized virus, and it avoids, besides, the dangers of *vaccino syphilis*, which may result, after vaccination, with the latter. It is well known that vaccination from person to person has been the means of inoculating syphilis. I need not dwell on this point, which has been so thoroughly discussed by the French and Belgian academies of medicine during the years 1860 to 1866. Drs. Viennois and Depaul alone give accounts of over 300 cases of this nature, due to vaccination with lymph from apparently healthy people. The "*Archives Generales de Medicine*," 1860; the "*Imperial Academy of Medicine of Paris*," 1864-1865; the "*Academy of Medicine of Paris*," 1865; the "*Union Medicale*," 1862-65; the "*Medical Gazette of Lyons*," 1866, give us incontestable proofs of such occurrences. This is sufficient argument to satisfy the physician and the household he attends professionally, that pure animal vaccine has superior merits and deserves preference.

But the advancement of bacteriology has demonstrated that, though avoiding one danger, we have other eminent ones left. Since it has been proved that many other contagious diseases are due to a specific inoculable

virus, and that certain animal diseases are transmissible from animal to man, and vice versa, the question arises: Are we safer in using horse or cow-pox vaccine to protect ourselves against small-pox than in using vaccine from another person's arm? Since we know, for instance, that glanders and farcy, and tuberculosis are common to man and beast, are we not opening the gate to those dreadful enemies of health and life? This is a most pertinent question. As to glanders and farcy, we need never fear if we use vaccine attenuated through cattle, as these animals never contract this disease even by inoculation. This fact is well settled.

But tuberculosis seem to affect most all kinds of domestic animals. I have seen, during my stay in Europe, the malady transmitted by inoculation and ingestion from man to animal, and animal to animal. I have seen chickens, rabbits, etc., getting tuberculosis from man's sputa by ingestion and otherwise; I have seen horses—the most refractory kind of animal to the disease—contracting it by inoculation; I have read hundreds of thoroughly reliable experiments of the same nature, and I have often carefully perused various reports of investigators and commissions in which appeared numerous observations tending to prove the transmission of the abominable constitutional disease from animal to man. And, judging from all that and the parasitic nature of the malady, I have no doubt that it can be and is too frequently taken from animals under various circumstances. Almost all the countries of the world furnish statistics and other writings to confirm this conclusion. But it remained for a far off country, almost unknown to the principal "annales" of the medical world, to set first seriously to work to unmask and extirpate, if possible, the polluting, hideous and yet invisible monster dealing its deathly blows from ambush. That country is Australia. There (as elsewhere) the most favorable ambush of the organisms, so infinitely small in size, and yet so monstrously terrible in their pernicious power, proved to be the milch cow and the fat (?) beef of the butcher shop. It is a notable fact, according to various reports, that in Australia people and cattle are attacked by tuberculosis to a very great extent. It is this truth, it appears, which lead her people to institute inquests in 1884-85 for the discovery and destruction of the cause—inquests which resulted in recommending and adopting later, in Melbourne, certain wise laws, rules and regulations providing for competent inspection of dairies, milk and meat, for the special purpose of excluding from food all tuberculous articles, and thereby avoiding the contagion. The report of 1885 of this commission (see Victoria Australia, 1885,) abounds with conclusive affirmative evidences of the transmission of tuberculosis to man through beef and milk. Man may get the malady when he drinks milk from a cow having tubercles in the udder, and from meat when it contains the same, when the virulent principle has not been destroyed by cooking or otherwise. But I need not go further on this line of arguments. It is not my object to discuss the nature and usual origin of tuberculosis as it appears in man. Since we know it to be contagious, the point to consider in regard to animal vaccine and vaccination is: What kind or what breed or breeds of cattle are more subject to tuberculosis? Are certain bovines of certain colors more subject to it than others? In a word, how are we to produce and gather vaccine through the body of cattle without gathering at the same time the poison of tuberculosis?

In reply to the first question, I will say that, since tuberculosis is due to a specific micro-organism, or living virus, if you like it better, which finds its way in the cattle system, where it meets proper soil for its development, it seems rational to believe that breeds have little to do with the disease in question; but naturally weak constitutions, or, perhaps, already diseased bovines (troubled with other maladies), may show the effects of the germs quicker, because in their constitutions they find possibly better suited soils for their rapid proliferation, which, of course, whether unusually more proliferous or not, tells comparatively quicker on the already weakened system. From this we may infer that, no matter what healthy breed of cattle one may expose to the germs of tuberculosis, all those that have the same opportunities, under the same conditions, may become affected, irrespective of title or origin; but that, at the same time, some may resist the injurious effects much longer than others. It is a question of "fight for existence"—the weak subjects falling sooner under the constant mining of the infectious microbes than the more powerful constitutions.

I believe that the idea that certain breeds of cattle are more subject to tuberculosis than others simply on account of the *breed* rests on a very weak foundation. For instance, it is very common to find among certain people a great tendency to regard the Jersey cattle as a consumptive lot. Their external appearance seem to lead some to this hasty conclusion. Nevertheless we might find tuberculosis probably as often in other much stronger breeds in appearances, but it remains unnoticed on account of their power of endurance which is superior to that of the Jerseys. That a weak system may show the effects of certain diseases sooner and crumble more rapidly under their influence is, I think, sufficiently established to leave little doubt, if any. Hence, since certain breeds of cattle are naturally weaker in constitution than others—in appearance at least—it is an act of prudence worthy of practice to be very strict when any of them are to be used as a field for the culture of vaccine for public use, but any cattle may be used if found healthy. To determine this point the history of the mothers and even the fathers should be inquired into, and the subject to be vaccinated should be critically inspected. The history of the father is, perhaps, less important than that of the mother, because, as a rule, the males kept for breeding purposes in the bovine specie are of superior order in every respect. This inquiry into the health of antecedents may be looked upon as exaggerated precaution, but we must not lose sight of the possibility of transmission of tuberculosis by heredity or infection of the foetus by the uterus, etc.

To avoid errors the choice of subjects for culture should be made by a who understands sufficiently the nature and symptoms of contagious diseases of domestic animals—not only tuberculosis, but others as well—for there may be some animal diseases whose effects upon man are not as yet determined. In a word, he who is acquainted with comparative pathology and can make a sound diagnosis of a disease—tuberculosis in particular in the dumb brute—is the most competent to direct the labors of a vaccine establishment. With all due respect to the medical profession—for there are two equally as worthy of public regard so far as science is concerned, if not in every other particular the first devoted to human health exclusively, the other to the lower animals while assisting greatly its elder sister;—with due respect, I repeat, to the

knowledge of the individual member of the two professions, I say it suffices not to be a graduate M. D., or a graduate M. V., V. S., etc., but an operator should be as much as possible a pathologist and surgeon competent for laboratory work with taste for such labors, and if he desires to make researches he needs to be a microscopist and bacteriologist as well.

Now, in young cattle, five to six months old, tuberculosis is seldom found. It is a slow progressing affection which shows only at a more advanced age the symptoms indicative of the development of tubercles in the organs, and which appear, as a rule, in the organs of respiration first. Therefore, by choosing calves, we can always, I believe, avoid tuberculous subjects, even though heredity may be considered a possible source of contamination and contagion. In fact, if a calf gets tuberculosis before birth from its mother, which was in an advanced stage of disease, it is probable it will be puny enough then to exclude it from operation for this very reason. But, usually, a cow with advanced tuberculosis aborts, or if not in the advanced stage, her offspring may be sufficiently healthy to serve in its younger days. Nevertheless, I should never use one knowingly, for notwithstanding that the virus of the vaccine, or vaccine lymph, forms itself in the "rete of malpighii" (in the skin), which is not the preferred soil of the germs of tuberculosis, we must remember that the circulation of fluids in the system may, in certain conditions, carry the infectious principle in various parts of the body and favor its penetration into vaccine matter in way of formation. Consequently we are justified, indeed I believe it is a duty to call attention to, and keep in our memory the fact that tuberculosis may be transmitted to mankind by vaccine from tuberculous cattle. Yet, with all that, cattle—I mean calves—are, so far as we know, the most suitable animals for the production of this antidote, if I may so call vaccine, for it avoids, as I said, the danger of *vaccino-syphilis*, and it avoids, perhaps, even better than humanized lymph the danger of tuberculosis itself, which may be transmitted from man to man. The arguments in favor of the doctrines I uphold in this letter have undoubtedly their weak points, but the most important latest discoveries of science and many reliable observations of recent date, my own studies and observations, combined with older doctrines and exploded theories which I have searched and sifted to discover their logical principles, have served as a foundation for my utterances. If there are any doubts in regard to the contagiousness of tuberculosis, and its transmission to man from animals, let us give the people the benefit of the doubt and let us not wait until we have hundreds and thousands of poor wretches brought to our eyes, like the opponents of *vaccino-syphilis* have done twenty-five years ago. Now, as to color of skin and light frames of animals to serve as vaccinegenous, it is conceded that white or clear-colored skins are preferable. It is not because the pigmented skins are refractory to vaccine, but because the pustules are not so apparent in them as in the former, and hence the very moment opportune to reap the harvest passes unnoticed and bad lymph is gathered. It is of the greatest importance to collect the vaccine lymph at a certain moment, which the competent vaccinator can judge by the appearance of the pustules, etc. If the lymph is collected before or after that moment, it is either inactive or impure. Therefore, always use, if possible, clear-skinned calves for the production of the medical agent in

question. As to the light frames, combined with weak constitutions, what has been said in regard to the latter, may be repeated here with as much reason. The nature of the frame so far as its volume and weight are concerned, is immaterial to the actual production of *pure virus*, although seemingly, by common consent, light-weight animals are preferred. In conclusion, I will say that in order to produce active, healthy vaccine lymph be very severe in the choice of calves; use none but perfectly healthy calves weighing from 150 to 300 pounds, with white or very clear skin, hair glossy, soft and unctuous to the touch, and then when the right time has come to collect the matter be most critical on the choice of pustules, and use none but perfectly developed ones with all the other characters which science and experimenters of reputation have demonstrated as a proof of activity and freedom from impurities and foreign germs.

I need not explain here the special methods by which this is obtained. Success depends on theoretical and practical knowledge, which is acquired by those who devote some time to such work.

A few words in regard to the preservation of vaccine. Many methods are now in use for that purpose. Ivory points seem to have the preference in this country. The vaccine on these points does not, however, keep as long its activity as it does in some other preparations. But, perhaps, they come cheaper to the buyers, who generally intend to use them immediately, and this may account for their general adoption.

The best method known now to keep vaccine long in purity and activity is undoubtedly the pomade—a preparation made with chemically pure glycerine, etc. It may thus retain its activity several months, if kept on proper atmosphere and hermetically closed. This is the method we intend to use, besides the ivory points, in our laboratory, which, we trust, will be patronized by the various Boards of Health of the country. Their patronage will give us strength, scientifically and financially, and will insure the medical profession and the public the best vaccine obtainable. However, no matter what may be the patronage of our undertaking, we shall spare no efforts to have always in hand an article warranted perfectly safe and reliable in the full sense of the word. We sincerely hope that the country at large will appreciate our endeavors to place on a solid basis a thoroughly scientific vaccine farm and laboratory, established only for public benefit and scientific purposes. We are starting in a modest way, but with the greatest prudence. We have not the large barns and spacious buildings which harbor, as a rule, filth and germs of every description, but neat, clean, private, new or remodeled buildings of suitable size to insure all possible disinfection and other sanitary rules to be adopted easily, while the preparation of vaccine, after its collection, will be in a special, clean apartment.

I regret not having the time at my disposition to write a better article than what I have very imperfectly given you here, and I trust you will excuse me, remembering I am so crowded with work. You will imagine how busy I am at present when you read this and know that I had to write it away from home on official duty. It seems to me that really this scribbling in such hurried style of the points for discussion, and this miserable paper are unworthy of presentation. If, however, you find something in it of any interest to you, you will perhaps find it in your heart to ignore the many imperfections.



The Secretary read the following subjects and points of discussion presented by State Board of Health of Missouri:

"1. How shall County Boards of Health be organized, managed and directed, in order to secure to the State Board, if such exists, the most efficient help and co-operation in general sanitary work, the reporting and proper registration of vital and mortuary statistics, and the enforcement of laws regulating medical practice in States where such enactments exist?"

Dr. Charles N. Hewitt, Secretary State Board of Health of Minnesota, stated that a county board of health stands in the same relation to the State Board that the family does to society. He said they had 1,050 efficiently organized local boards of health in Minnesota. The local boards have charge of the sanitary inspection of their districts, both in respect to men and animals. He explained the perfect system of communication between the State and local boards by stating that small-pox appeared in a distant township and within twenty-four hours he had a list of every man, woman and child who had been exposed, and within forty-eight hours after he received the first telegram every one was vaccinated or quarantined and the disease did not go beyond the family in which it first appeared. The work was done by two local health officers and the expense to the State was \$10.50. Contagious diseases of animals are controlled in the same prompt manner. A little treatise upon glanders was distributed to the local boards of health. He found that in proportion to the efficiency of the local board organization, with the co-operation of the State Board, was the efficient sanitary work of the State performed. Local boards should understand that they stand shoulder to shoulder. When the local officers have any trouble, then it becomes necessary for him to visit the locality, and the people are so well satisfied with the rulings of the State Board that its decisions have never been disputed. He thought that the organization of local boards lay at the foundation of all sanitary work. Local boards look to the State board for assistance. He enlisted the services of young physicians and found many competent men who liked the work. In the matter of expenses incurred, if the local board can not pay, the State Board does; but the local boards have to pay if they can. The expenses incurred by the health officers in an epidemic in Minnesota is so small that the people do not realize it. The appropriation for the year for the State Board

of Health is \$5,000, \$2,500 of which is the salary of the Secretary, and the balance used at the discretion of the board. They had organized a laboratory, and young men from the State University were glad to work in it for the experience it affords. One student obtained a scholarship in consequence of the advantages of his laboratory work.

Dr. Lee said he had listened to Dr. Hewitt's remarks with much interest. There had been in Pennsylvania a very strong pressure brought to bear for the establishment of county boards. He was glad to have the benefit of Dr. Hewitt's experience. There are no local boards outside of the incorporated cities and boroughs.

Dr. Oldright said he would like to hear from Dr. Hewitt in regard to nuisances. In these matters they needed men who were trained for the work, but boards of supervisors were not elected with special reference to their qualification as health officers. In times of epidemics the financial interests of the town are in danger, and the authorities are very glad to co-operate with the board.

Dr. Hewitt stated that none of the supervisors professed to be sanitary men, but it was surprising to see how much they knew about the work, and some of their best inspections had been made by these men.

Dr. J. N. McCormack, Secretary State Board of Health of Kentucky, said they had no township supervisors in his State. They had great difficulty in organizing county boards of health in any considerable number of counties, but that some five or six years ago the law was amended so as to leave the appointment of county boards of health to the State Board. He could not go so far as Dr. Hewitt did in speaking of the general efficiency of the local boards. He found no difficulty in times of epidemics, but in typhoid fever and diphtheria, which cause a far greater mortality, it was difficult to get them to take any very active steps. Another difficulty was in the collection of facts. It was to be hoped that they might be able by modern methods of sanitation to remove the causes of these diseases. In this they had not been able to get the active co-operation of the county boards of health. In very many instances they had secured efficient co-operation, and latterly, since the election of new health officers, the State Board had been able to get a fair sanitary survey of most of the counties of Kentucky, and he felt very much encouraged with the condition of health affairs in the State.

Dr. C. A. Lindsley, Secretary State Board of Health of Connecticut, said he was much interested in the report of Dr. Hewitt. In Connecticut they were perhaps far behind the Western States in the matter of sanitary work, and chiefly for the reason which had been mentioned, the aid and assistance which they ought to have from the local boards of health. In Connecticut there was a nominal board of health in every town, consisting of the selectmen and the justices of the peace. A provision was made which authorized them to add such physician as they might choose, so that the board properly consists at present of the selectmen, justices of the peace and such physician as they may elect. It was provided that this body may delegate their duty and powers to a committee, and he considered that a very wise provision. At the last session of the Legislature a provision was made that on the Wednesday following the first Monday in October, these boards of health shall organize. They were satisfied with the honor of being called the board of health, but in nine cases out of ten, except in an epidemic of small-pox, they have never taken any action as a board of health; now they are required to organize and elect officers. In Minnesota and other States there seemed to be a mandatory power lodged in the State Board which his board knew nothing of. They can not require anything of anybody; they simply give advice. If it were possible to have more power he thought it might be expended with advantage, but he thought they had made a gain in regard to organization and in securing reports from local boards of health.

Dr. J. F. Hibberd, of Indiana, inquired of Dr. Hewitt whether he had reason to believe that there had been outbreaks of disease of which he had gained no knowledge. Whether the local boards gave their attention to cases of typhoid fever and diphtheria?

Dr. Hewitt said that typhoid fever sometimes prevailed of which they did not hear. The report of infectious diseases in his State is compulsory. Some communities would not call for a physician, and they had to compel the poorer classes to receive the attention of the physician. They sometimes absolutely refused medical attendance. Diphtheria was one of the most difficult diseases to corral. He said there were many outbreaks of which they never heard, but in the majority of cases they were glad of the help of the State Board. He said: "We preach and pray and exhort; we keep up the talk and are making headway. I tell you sanitary workers have got to work with the brake on. I have to run it with the brake on, and

expect to wear the brake out." They distribute information in the form of circulars and publish a paper devoted entirely to the interests of sanitation.

Dr. Hunt, of New Jersey, said that in his State they were able to accomplish a great deal with the aid of the local boards. In addition to the local boards they appoint inspectors.

Dr. McCormack called attention to the resolution adopted by the executive committee of the American Public Health Association, "That the representatives of the State Boards of Health constitute a section of the American Public Health Association," etc., and stated that the consideration of the resolution would be in order at 8 o'clock P. M.

The meeting then adjourned to 2:30 P. M.

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#### AFTERNOON SESSION—2:30 O'CLOCK.

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The Conference met according to adjournment.

Dr. Abbott, in referring to Dr. Hewitt's remarks of the morning, said he was particularly pleased with the idea of publishing an independent paper under the control of the State Board of Health. It would bring the State Board into direct communication with the local boards, and they would all have the benefit of the questions discussed.

The following paper by Lucien F. Salomon, M. D., Secretary Board of the State of Louisiana, was then read:

## REPORT UPON THE OUTBREAK OF FEVER AT BILOXI, MISS.

BY LUCIEN F. SALOMON, M. D., SECRETARY BOARD OF HEALTH STATE OF LOUISIANA.

On Tuesday, August 31st, several persons arriving in New Orleans from Biloxi, Miss., called at the office of the Board of Health of the State of Louisiana and stated that at Cadet Point, the eastern extremity of the town of Biloxi, there were a number of persons sick with fever, and that two had died. It was rumored that the disease was yellow fever. Having received no information other than these reports and rumors, Dr. Joseph Holt, President of the Board of Health, immediately telegraphed (at 11 A. M.) to Dr. J. J. Harry, President of the Harrison County Board of Health (in which county Biloxi is situated), advising him of the receipt of these reports, and asking him for information in regard to the nature of the existing disease at Biloxi. At the same time I telegraphed to Dr. Charles Pelaez, whom I knew to be a physician resident and practicing in Biloxi. Having received no reply to these telegrams by 3 o'clock, P. M., Dr. Holt decided, in the interest of the citizens of New Orleans, many of whom were sojourning in Biloxi for the summer, to proceed to Biloxi and investigate, personally, the truth or falsity of the rumors, and endeavor to see the cases of fever with a view of arriving at a decision as to its nature. He asked me to accompany him, and we left New Orleans at 3:35 P. M., arriving in Biloxi about 7 o'clock. Upon our arrival we learned that a number of cases of fever did exist at the point named and were being attended by two local medical gentlemen, Dr. J. J. Lemon and Dr. J. W. Maybin, both of whom were unknown to us and entire strangers.

We dispatched a messenger to both these gentlemen notifying them of our arrival and requesting them to call upon us at the hotel, which in due time they did.

We then stated to them the object of our visit and requested that they furnish us with information, clinical histories, temperature observations, etc., of the cases under their charge. The information thus elicited was very meagre, owing to the fact that no notes had been kept of the cases, no record of temperature or pulse kept and no observations of any kind recorded. Beyond the statement of both these gentlemen that the cases were all cases of "bilious fever of a mild type," and that with the exception of the two who had died, all were well and going about, the result of our interview was, to say the least, very unsatisfactory to us, and lead us to ask the attending physician to permit us to see the cases, accompanied by them. It being now late (10 P. M.), the next morning at 7 o'clock was appointed as the time for our investigation.

During the night Dr. T. S. Scales, Health Officer of the City of Mobile, Ala., had arrived, bent upon the same mission as ourselves, and accompanied by Drs. Lemon and Maybin we (Drs. Holt, Scales and myself) were driven to

the infected locality, a small settlement just outside of the town of Biloxi proper, and opposite the shrimp canning establishment of Messrs. Lopez, Dunbar & Co.

We shall just here, and at once, dismiss any further consideration of this canning establishment, as it had no part as a factor in the production of the disease. It was in as clean a condition as an establishment of this kind could well be, had been in operation (after a period of idleness) only a few days, and even if there were (which we did not find) decaying shrimps loosely thrown about, this would have been more likely to have produced a disease of an entirely different type, which would have in all human probability afflicted the employes in the factory rather than to have gone outside and attacked two families of whom not a single individual was at the time employed therein.

Arriving at the house of a Mr. Cox, where the first case of sickness was said to have occurred, we found the entire family at home and carefully questioned each one old enough to answer intelligently. We gained the following information which is a verbatim copy of notes taken by me at the time in the presence of Drs. Lemon, Maybin, Scales and Holt.

The following are notes of

#### CASES IN THE COX HOUSE.

1. Lofton Cox—Age 14 years. Taken sick Wednesday, August 18, with chill, followed by fever which lasted three days. Headache, pain in back and limbs, nausea but no vomiting. Temperature *about* 100. (Dr. Lemon.) Convalescent.

2. Cornelia Cox—Age 15 years. Taken sick on Tuesday, August 24th. Fever lasted three days; nausea and vomiting. Vomited matter said to have been bile and mucus. After passing two days in calm stage with no fever, she died on Sunday, August 29th. Parent states that she lay in a semi-comatose condition, but could be aroused by the doctor at his visits.

3. Mrs. Cox. Taken sick on Wednesday, 25th. Slight chill, followed by fever which lasted two days. Still very weak and prostrated. She is about eight months pregnant.

4. Annie Cox—Age 11 years. Taken sick on Wednesday, August 25th. Not a high fever, but sufficient to keep her in bed two days. Convalescent.

5. Laura Cox—Age 6 years. Taken sick on Thursday. In bed one day. Is now well.

6. Mr. Cox. Was taken sick on Wednesday, August 25th, in the evening. Light chill, severe headache, sick stomach, but no vomiting. Dr. Lemon says temperature was about 100, and that fever lasted but one day. Mr. Cox is still very weak and has not been able to go out of the house. No jaundice, but eyes still slightly injected.

This family came to Biloxi last fall and have been living in this house ever since, being employed off and on at the canning establishment.

## CASES IN THE HOCKLEY HOUSE.

The house occupied by the Hockley family is about twenty-five yards east of the Cox house.

1. Mrs. Hockley. Was taken sick on Monday, August 23d. Woke up with a chill at 6 A. M., fever followed, lasting three days. Had headache, pain in back and limbs, nausea and vomiting of bilious matter. Mrs. Hockley is still in bed at the time of our visit, September 1, and expresses herself as feeling very weak and prostrated. Pulse 60, slight jaundice. Tongue clear and red.

2. Mr. Rhodes, brother-in-law of Mrs. Hockley was taken sick on Wednesday, 25th, at 1 P. M. No chill. Fever, headache and pain in back and limbs. Although the fever was said to have lasted but twenty-four hours, we found Mr. Rhodes in bed, saying he felt weak and prostrated. Slightly jaundiced. During illness had vomited quantities of mucus and bile.

3. Mrs. Rhodes. Taken sick on Wednesday 25th, at 11 P. M. Had no chill, but complained of violent headache. Said to have fever two days, nausea and vomiting. Delirious. Had two convulsions, threw up black vomit and blood, and died on Sunday at 11 A. M. Jaundiced after death and ecchymotic patches about face and neck.

4. Isabella Hockley—Four years old. Taken sick on Thursday at 11 A. M. Fever lasted about thirty hours. Was still in bed when we saw her September 1st, slightly jaundiced, tongue red and pointed, pulse 70.

Eleventh case. Mrs. Elder. Taken sick during the night between Tuesday and Wednesday, August 25. Saw her at 10 A. M. She stated that she had waked up at about 4 A. M., feeling chilly, headache, pain in back and limbs; nausea. Had vomited before our visit, about 6 A. M., a quantity of watery substance, green in color (bile). She stated that she had visited the Cox house Saturday and again on Sunday after the Cox child had died. Present condition (September 1, 10 A. M.): pulse, 100; temperature, 100.6°. No epigastric tenderness. Face slightly flushed, circulation sluggish. Pulse gaseous. Eyes glistening.

The report of Dr. W. H. Watkins, sanitary inspector of the Louisiana Board of Health, who had been sent to Biloxi, subsequently furnished, shows the following as the course of the disease in this case:

"Dr. Lemon states that on September 2d, Mrs. Elder's temperature reached 104."

Dr. Watkins' observations:

"September 3, 5 P. M., temperature, 102.4; pulse, 100.

"September 4, 9 A. M., temperature, 100.6; pulse, 80.

"September 4, 5 P. M., temperature, 101.6; pulse, 80.

"September 5, 9 A. M., temperature, 99.4; pulse, 73.

"No further observations taken."

After viewing the cases as above, and on our return to the hotel, Drs. Scales, Holt and myself, after due deliberation, formulated the following, which was telegraphed to both New Orleans and Mobile, and was subsequently given to the Associated Press:

"Biloxi, Miss., September 1, 1886.

"We, the undersigned, have made a thorough examination of the seven convalescents, also of one patient now ill, and have obtained the clinical

histories of the two persons who died last Sunday, August 29th. The sum of evidence indicates yellow fever as the cause of illness."

Of the methods of sanitation, immediately instituted by the co-operation of the State Boards of Health of Mississippi and Louisiana and the thorough stamping out of the disease, I shall not speak here, as this has already been set forth in the able and complete report published by Dr. Joseph Holt.

I have so far given the simple, plain, unvarnished facts as they presented themselves to us.

Seven more cases occurred within the two days immediately following our visit, and all in the same vicinity, two of which were in the Cox House, and one in the house of Cox's brother, a short distance away (400 yards).

Subsequent to our return to New Orleans, Dr. John Godfrey, of the Marine Hospital service, arrived in Biloxi, and after remaining four days, submitted the following to his superior, Surgeon-General Hamilton:

"I reached Biloxi on the morning of the 3d, and left at 6 A. M., September 7. Nine persons had been taken sick previous to my arrival. Two of these had died and the rest had recovered.

"These nine cases, and that of one other, Mrs. Elder, sick at the time, were those upon which the Louisiana State Board of Health based its verdict of yellow fever.

"They all lived in the infected district, a narrow tongue of land, with the bay in front and a slough, sometimes wet, sometimes dry, in the rear. Their quarters were from fifty to two hundred yards from the shrimp canning factory, and all were in an extremely unclean state."

(See report of Inspector.)

"This inspector, a man of competence and reliability, was heard to say that he took from these quarters more filthy material than he could get from half a square in New Orleans, which expresses all that need be said on that subject.

"The water-closets and wells were significantly near together. The latter were from eight to twelve feet deep, oftener eight than twelve.

"The shrimp offal was presumptively thrown over at the end of the wharf, but at times it was dropped over the sides in large quantities, near the factory, and was there found and disinfected in large heaps by the inspectors.

"While the factory was in operation shrimps were constantly thrown through the cracks of the platform and factory floor, where they were left to accumulate under the latter. They reached in places from the ground to the floor, a distance of several feet.

"Considering that no live thing decomposes sooner and smells worse after death than shrimp, it would be strange if sickness did not develop in that neighborhood, or, having developed, was not modified by the surroundings.

"I am not of the opinion, however, that the factory played an important part in causing the sickness. Several years ago Dr. Champlin treated cases of similar character in the same district, occurring about September 1, for more than one season. Last September Dr. Aldrich had between fifteen and twenty cases of the same kind.

"As nearly as could be ascertained eight persons had fever when I reached Biloxi, to wit: three in the infected district, one about three hundred yards, one about six hundred yards, and three about a mile therefrom. One case



developed on the morning of my arrival, at 10 o'clock. \* This case and all the others had recovered before I left Biloxi, excepting Mrs. Elder, who was taken sick on the 1st of September, was five months enceinte, and miscarried on the 6th inst., about noon.

"All the patients were treated with calomel and quinine, took beef broth, chicken soup, bread and coffee. Had slight nausea, sometimes vomited greenish matter. Had no yellowness of gums, skin or conjunctiva.

"Had no suppression of urine and albumen in only one. They were allowed to get up and walk from room to room. Some had remissions and others had absolute intermission.

"On the morning of the 4th the temperature of all ranged from 101 F. down to normal. I requested one attending physician to withhold quinine in all his cases at the evening visit. In every instance but one the temperature had risen from one to three degrees.

"With these clinical facts before me, and with the additional fact that nearly a hundred operatives were at the factory in the "infected district" daily, from morning till night, more than two-thirds of them—men, women and children—going to their homes in another part of the town, and all remaining perfectly healthy, it would have been a medical mistake for me to have recognized yellow fever.

"As to the work of Drs. Holt, Scales and Salomon, I have only to say that I was not able to elicit information from the convalescents tallying in all respects with theirs.

"For instance, all declared most positively that there was no yellowness of the skin. As to Mrs. Rhodes, who died, her husband told me that she had never been well since having a baby over a year previously, and that since last November she had been barely able to get about her work. There was no suspicion of black vomit except in her case. She died in convulsions. Those present differ. Some say that she drank claret and vomited just before dying. The others, that she spilled it on the sheet in the act of drinking.

"Referring only to those that were sick when seen, I am satisfied that they had malarial fever, modified by bad water, by domestic insanitation, and, possibly, by the constant stench of putrefying shrimp.

"Perhaps it is possible that the first batch of nine cases could have had yellow fever, and the next fever have been caused by malaria, but it is, so far, without the domain of probability that few medical men could be brought to believe it."

A laborious, carefully-prepared and convincing (!) report. Convincing, when we consider that the "quarters" and surroundings of these people "were in an extremely unclean state." Granted. But has it ever been shown that accumulated garbage gives rise to malarial fever? Does contaminated well water (which it is stated upon equally good authority these people did not drink) ever give rise to malarial fever of the bilious remittent type? Is it not more probable that such factors would have produced a disease of an acute infectious character, even admitting (which I do not) that they had anything whatever to do in originating the pestilence under consideration. Or can it

be that decomposing fish (shrimp) will produce malarial fever or "modify" it into a fever of "one paroxysm." If any of these mentioned factors do, or are claimed to produce the malarial poison I, for one, have yet to learn it.

The report is further convincing in the fact that Dr. Godfrey states in the beginning that "nine persons had been taken sick previous to his arrival," and further on states that "eight persons were sick when he reached Biloxi." These eight added to the ten cases before September 1st make eighteen, which does not tally with the nine as stated

Dr. Godfrey states that "on the morning of September 4th the temperature of all ranged from 101 down to normal."

The clinical notes of Dr. Watkins show the following:

Mrs. Fore ditch, September 4th, temperature ranged from 101 to 101.8.

Ella Williams, September 4th, temperature ranged from 101 to 101.6.

Issabella Cox, September 4th, temperature ranged from 99 to 102.1.

Ella Cox, September 4th, temperature 102.

But even admitting that Dr. Godfrey is right and Dr. Watkins is wrong, it must be remembered that the 4th of September was the third or fourth day of the cases seen by him, when we expect to find a lowering of temperature in yellow fever, and as a rule always do find it.

Dr. Godfrey lays particular stress upon the fact that nearly a hundred operatives were at the factory daily from morning till night and that none of them contracted the disease, and adduces this as his most potent reason for not diagnosing yellow fever.

Now, when it is shown that this factory played no part in the production of the disease (as before stated), that the disease was in the houses of people living outside of the factory, and that the factory employes were not brought into contact with the sick, it can be easily understood that at the outbreak of a disease which was speedily controlled, these employes escaped the infection.

Dr. Godfrey repeats the fiction that the vomited matter on the sheets upon which Mrs. Rhodes lay was produced by wine which she had taken. Had the doctor seen the sheets covered with what appeared to the eye to be characteristic black vomit, and other stains of pure blood which had been vomited, he would not have been so ready to believe this imposition upon his credulity.

The brother of Mrs. Rhodes, who nursed her throughout her illness, was asked by me, specifically: "What kind of wine did your sister drink which, having been vomited by her, could have produced stains like this?" He, without hesitation, replied: "She drank no wine at all, Doctor. She took nothing but the medicine Dr. Lemmon gave her."

The report also states that there was in the cases seen by Dr. Godfrey, "no yellowness of gums, skin or complexion," and that "all declared most positively that there was no yellowness of the skin" in the two cases which died.

As to this statement, the persons themselves differ in the information given to Dr. Godfrey and to us.

Mr. Cox stated to us that his daughter was yellow after death. Mr. Rhodes stated the same in regard to his wife, and several other persons who had seen the dead bodies voluntarily made the same statement to us. In this,

as in other important points, Dr. Godfrey was evidently misinformed after it was learned that this was an important point in the determination of the cause of death. While Dr. Godfrey is satisfied that the cases he saw were malarial fever, the opinion is qualified by the statement that it was a malarial fever, "modified by bad water, by domestic insanitation and possibly by the constant stench of decaying shrimp."

Modified how?—In what manner? Is it possible that malarial fever can be so modified by these surroundings as to produce a fever of a type such as shown. A fever which, after lasting three days will allow a person to pass into a calm stage, and either go into a semi-comatose condition and die, or have convulsions, throw up black vomit and die? It is hardly within the domain of unprejudiced belief, and "few medical men could be brought to believe it."

October 1, 1886.

Dr. Conn, of New Hampshire, thought this paper brought up the question of inter-state notification, and moved that the paper be laid on the table until Dr. Bryce had made his report. Motion carried.

Dr. Bryce's paper was assigned for the evening.

The following questions were then considered:

"2. Upon what basis, on common agreement, may State boards meet that are empowered to administer and enforce acts to regulate medical practice, and indirectly education, in the several States?

"Is it feasible and wise for them to unite in a uniform policy toward medical colleges, and in the establishment of a common standard of recognition of such schools, in regard to length and number of courses of study required for graduation, preliminary requirements, percentage of graduates to matriculates, and other details of collegiate medical instruction?"

Discussion opened with some remarks by Dr. J. H. Rauch, Secretary State Board of Health, Illinois, as follows:

A categorical reply to these questions would have little practical value, in view of the fact that, although growing, it can not yet be said that the sentiment is unanimously in favor of empowering State Boards of Health "to administer and enforce acts to regulate medical practice." Instead of such a reply it will be more profitable to consider, first, the relation of health boards to the subject of medical practice—which of necessity, involves the subject of medical education; and next, to consider the practical results which have been accomplished by such boards where they have been entrusted with the power and authority to influence these subjects.

In a broad sense, the State Board of Health is created and maintained for the conservation of health and life. Limited in the number of members, and

with its duties largely devolved, as a rule, upon a single executive officer, it must be obvious that the work to this end which such a board can actually do of itself sinks into relative insignificance when compared with what may be accomplished by the aid of the large body of the medical profession. It is not alone that the profession is most directly and intimately concerned with the interests of health and life, but it is from the profession that the ranks of sanitarians are mainly recruited, and it is to the profession that sanitary science owes its very existence. Whatever, then, the board of health may do toward the suppression of quackery, toward improving the status of the individual practitioner, toward the fostering and encouragement of a higher standard of medical education and of the requirements for admission to the profession, must result in promoting the interests of health and life by developing the most valuable and effective working force whereby to further the purposes for which boards of health are established.

The desirability of these objects being granted, it follows that State boards may be properly and legitimately "empowered to administer and enforce acts to regulate medical practice;" and that every well-considered step—by which the standing of medical schools may be determined, by which the schools may be stimulated and aided to exact higher qualifications, both for admission to their classes and for graduation, by which the ignorant and unworthy may be excluded from the profession, and by which unprofessional and dishonorable conduct may be legally punished—is, in its essence, a sanitary measure for the protection of life and health.

While this consideration touches only the benefit which the board may receive from the profession, it can, I think, be fairly claimed that the relation is reciprocal. The necessity for the statutory regulation of the practice of medicine is shown by the fact that efforts to that end have been made continuously ever since the earliest settlement of this country, and before that time in Great Britain as early as 1422. In an address before the section in State Medicine at the last session of the American Medical Association I have shown the authority upon which the exercise of this power by the State is founded, and have traced the growth of medical-practice laws in the several States down to the present time. It is there shown that there are now thirty-three States and Territories in the Union which have laws in existence for the regulation of the practice of medicine. But these laws differ widely, not only in their provisions but in their modes of administration. For example: The medical practice act of California is substantially the same as that of Illinois, of West Virginia, of Missouri, of Minnesota and of Iowa, as to the requirements entitling physicians to admission to practice, to the verification of diplomas from "legally-chartered medical institutions in good standing," the record of certificates, examination of non-graduates, etc. But in that State the administration of the act is confided to examining boards appointed from each of the three State medical societies—the regular, the homeopathic and the eclectic. A candidate rejected by one board may apply to another, and Dr. Hatch, when Secretary of the California State Board of Health, only recorded a natural result in his communication to the Illinois State Board of Health when he wrote: "It is known that many have been thus licensed who are totally and notoriously unqualified to practice medicine." A similar condition under a similar law obtained in

Kansas until the law was declared unconstitutional on the ground that the examiners being State officers should have been appointed by the Governor instead of by the medical societies. In Texas even greater powers were conferred upon examining boards, appointed in each judicial district by the presiding judges; but under the Penal Code of 1879 any graduate of a chartered medical college, without regard to the standing or character of such college, is entitled to practice by merely registering his "diploma" in the office of a county or district clerk. This was also formerly the case in Missouri, and is to-day in Indiana, Michigan and Wisconsin under substantially similar laws.

I will not stop to discuss at length the effect of such laws. It must be obvious that their practical result is to stimulate the "diploma mills"—(the "legally chartered medical institutions" of the baser sort)—and to antagonize the efforts of the profession and of the reputable colleges to elevate the standard of medical education. The commercial consideration presents a constant temptation, not successfully resisted even by some of the metropolitan schools—to relax the conditions of admission and of graduation; and "legally chartered medical institutions" are readily established, or at least organized, under existing laws in most States. Even in Illinois a charter for an institution empowered to confer degrees in medicine and to issue diplomas may be obtained upon compliance with very simple conditions and the payment of five or six dollars.

Such diplomas have, however, lost much of the artificial value and importance formerly attached to them, not only in Illinois, but throughout the country. One of the most important results of the administration of the medical practice acts of the past eight or nine years is, indeed, the relegation of the diploma to its legitimate place in the estimation of the profession and the public. In the very first year of its existence the Illinois board took action which led to a judicial decision in October, 1878, which clearly defined the diploma as conferring no legal rights or powers whatsoever, but as being mere documentary evidence of a degree conferred, and, in itself, establishing no fixed standard of professional knowledge—since, not only do different institutions have different standards, but, in the language of the court, "the same institution does not apply the same standard to all its students." Hence the necessity of creating some authority "to have charge of medical practice and medical practitioners in Illinois, and surveillance of the professional conduct of physicians in the interests of the health and life of the citizens of the State." That decision also elucidated and emphasized a fundamental principle which had been largely lost sight of, to-wit: That the right to practice medicine is not a constitutional privilege, nor a property, nor a contract; but is a mere statutory privilege, subject to the control of the Legislature, and entirely independent of a diploma. It also drew a broad and sharp distinction between criminal conduct and "unprofessional and dishonorable conduct," in the former of which, "as a citizen, the physician is, with every other citizen, answerable to the criminal laws, and as an alleged criminal is liable to be arraigned before the courts," which latter, however, can not interfere in matters of professional morality, honesty and uprightness. But since these latter are of the essence of the qualifications of a

calling which sustains the most sacred and intimate relations with the individual and the family, the Legislature has recognized the importance of establishing a tribunal to be the judge of "unprofessional and dishonorable conduct," and has clothed that tribunal with power to exclude from the statutory privilege those guilty of such conduct by refusing or revoking the certificate which entitles them to practice. The court says: "It is only as a physician that he is liable to have his professional conduct inquired into and brought before the State board of health. The term unprofessional is therefore far wider than criminal. Many acts would be unprofessional that were not criminal; some acts that were criminal might not be esteemed unprofessional. What is professional conduct can only be determined by bringing the act to the professional criterion, and who so well qualified to judge of the proper professional criterion for the medical profession as a board constituted as the bill shows this board to be? The 'unprofessional' conduct which authorizes the board to exclude a physician from the profession does not, therefore, mean necessarily criminal or immoral acts, but such conduct as is inconsistent with the honorable practice of the profession; and in judging of such conduct the board of health has a wide discretion, and in its exercise courts ought not to interfere with it."

It is, indeed, a monstrous doctrine which holds that a piece of parchment setting forth that at a certain period of the possessor's life he was a man of honor and probity and skilled in certain arts and knowledge, should operate forever after to shield him from the just consequences of his departure from that high and honorable professional standard, or of the prostitution of his medical skill and attainments to base and ignoble ends. And not less to be deprecated is the legislative neglect or indifference which permits the possessor of such a parchment to engage in the practice of medicine without regard to his moral status or to the methods by which he seeks to gain the confidence of the sick and afflicted—the most credulous and the most helpless of all classes of the community.

The standard of requirements for graduation and the course and methods of instruction may be as admirable and as thorough as those enforced and exacted here in the Dominion but without some legislative provision which shall continue that high standard after graduation and throughout the entire professional life, there is nothing to restrain the quack and the charlatan armed with a diploma—there is no effective mode of punishing or preventing unprofessional and dishonorable conduct, or of protecting the public from its consequences.

In some of our States—Alabama, Mississippi, North Carolina and Virginia—the diploma is, as a matter of fact, entirely ignored, and the right to practice must be established before various examining bodies. There is much to be said in favor of the theory upon which such methods are based as to the mode of entrance into practice—and possibly, if the custom were uniform in all the States, it might be found adequate. It is not too much, however, to claim that the action of the State Boards of Health of Illinois, West Virginia, Missouri and Minnesota—empowered as these are to refuse certificates entitling to practice to those guilty of unprofessional and dishonorable conduct and to revoke certificates for like cause—has already aided the efforts of the profession toward a higher medical education and status in a greater

degree than any other agency. Iowa has also recently joined the States mentioned and the results thus far achieved are a sufficient demonstration of the wisdom and feasibility of confiding the regulation of medical practice to these bodies. For my own State I do not hesitate to say that the profession is in better shape than that of any other State in the Union of equal proportion, and considering the character and comparative newness of the population.

As germane to the scope and purport of the questions under discussion, I beg to submit some passages from a paper presented by Dr. H. A. Johnson, of Chicago, to the American Medical Association in 1879, on the regulation of medical practice—"The Regulation of Medical Practice by State Boards of Health, as Exemplified by the Execution of the Law in Illinois:"

"The Legislature of Illinois, at its session of 1877, passed a bill creating a State Board of Health, and at the same session an Act to regulate the practice of medicine in the State of Illinois. The duty of carrying into execution this last law was committed to the State Board of Health. The bill provides that every person practicing medicine in any of its departments shall possess the qualifications required by this Act. If a graduate of medicine, he shall present his diploma to the State Board of Health. If the diploma is found genuine, and if the person named therein be the person claiming and presenting the same, the State Board of Health shall issue a certificate to that effect, and such diploma and certificate shall be conclusive as to the right of the lawful holder of the same to practice medicine in this State. If not a graduate, he shall present himself before said board and submit himself to such examination as the board shall require, and if the examination be satisfactory the said board shall issue its certificate in accordance with the facts, and the lawful holder of the certificate shall be entitled to all the rights and privileges herein mentioned; the lawful holder of a diploma shall be required to make an affidavit that he is the legal possessor of the same, and that he is the person therein named. These certificates, whether issued to graduates, or upon examination, shall be recorded in the office of the clerk of the county in which the holder resides. The register of the county clerk shall be open to public inspection.

"The examination of those not graduates may be wholly or partly in writing, and sufficiently strict to test the qualifications of the candidate as a practitioner. The board has power to refuse certificates for unprofessional or dishonorable conduct, and to revoke certificates for like cause. The law requires the board to grant certificates to the holders of diplomas from legally chartered medical institutions in good standing, giving to the board the power to determine what colleges are in good standing. It also defines a practitioner of medicine to be one who shall profess publicly to be a physician and to prescribe for the sick, or who shall append to his name the letters 'M. D.' Itinerant vendors of any drug, or application for the treatment of the sick, or cure of disease, are required to pay a license of \$100 per month. The punishment for any violation of the Act is a fine of not less than \$50 nor more than \$500, or by imprisonment in the county jail for not less than one month or more than a year, or both. The provisions of the Act do not apply to persons who have been in the practice of medicine in the State of Illinois ten years or more.

"This law went into effect July 1, 1877. The board organized and soon after July began its work. Its utility was a matter upon which the profession was by no means a unit. By very many physicians it was thought inexpedient and perhaps impossible to carry out its provisions so as to better to any appreciable degree the conditions and qualifications of those engaged in practice. The greatest difficulty was apprehended from the apparently conflicting schools of medicine. It was thought impossible to form a board that should work well together and which should have the confidence of those holding these widely different theories upon therapeutics. For these reasons the formation of the board and its action was on the part of very many waited for with indifference or distrust. The Governor, in making the appointments, recognizing the existing facts, appointed three physicians, called 'regular,' for the want of a better term, one homœopath, one eclectic, and two who were not physicians but who were men deservedly held in high esteem as thoroughly accomplished and scientific gentlemen, both of them at the head of prominent institutions of learning. It was thus a mixed board. In the prosecution of the work—the regulation of the practice of medicine—there were found to be seven grades or classes of doctors.

"1. Those who hold diplomas from legally organized medical colleges in good standing, that is, having the confidence of the profession at large.

"2. Those holding diplomas from colleges not recognized as in good standing, either for the reason that the curriculum is too short, too narrow, and the work of teaching too carelessly or imperfectly done, or because they are not teaching bodies at all, though chartered schools, their function being the sale of diplomas. As medical colleges they are myths; as business organizations they have only an indifferent success.

"3. Midwives—women engaged in that special department of practice.

"4. Those holding diplomas that do not belong to them, obtained by inheritance, by borrowing, or by theft. Among this class some change the name of the diplomas, while others, sacredly respecting the venerable document, issued perhaps before they were born, only clumsily mutilate its date and change their own name so as to accommodate the holder to the diploma. Forty-one practitioners were found under assumed names.

"5. Non-holders of diplomas who had been in practice ten years or more in Illinois.

"6. Non-holders of diplomas who had not been in practice ten years in Illinois.

"7. A class of itinerants going from town to town advertising in advance that they will work their wonders at such a place, on such days of such month, etc

"The work of the board had to do with this heterogeneous mass. It commenced first by inviting physicians holding diplomas to present them for verification; second, by holding sessions at different point in the State where those not graduates could present themselves for examination. These examinations have been conducted in writing by different members of the board, and, from the papers seen by the writer, are judged to have been practical and thorough. The fact that not one-half of those presenting themselves passed justifies the belief that in this respect the board has done its duty.



"The report of the board presented to the Governor in December, 1878, gives in detail the results of this work up to that date."

[For Dr. Johnson's figures then given I substitute those from the last annual report, that for 1885.]

"There have been issued to holders of diplomas from schools deemed by the board in good standing 7,223 certificates; upon affidavits from non-graduates of ten years' practice within the State (prior to July 1, 1877), 1,141; upon examination of non-graduates of less than ten years' standing, 224; being a total of 8,588. Certificates were also issued to 951 midwives, making a grand total of certificates of 9,539.

"The effect of this law and its execution has, I think, been much more satisfactory both to the profession and the public than its most ardent supporters dared to hope. The attention of the non-professional public has been called to the importance of knowledge as a qualification for practice. A general interest has been awakened upon this subject which in its influence will lead to a more just estimate of the physician and a better understanding of the responsibilities of his office.

"The board is invested with authority to determine what constitutes a medical college in good standing. At a meeting held in Cairo, November 5, 1877, the following resolutions were adopted:

"*Resolved*, That on and after July 1, 1878, the board will not consider any school in good standing which holds two graduating courses in one year.

"*Resolved*, That on and after July 1, 1878, the board will not recognize the diplomas of any medical school which does not require of its candidates for graduation the actual attendance on at least two full courses of lectures with an interval of six months or more between each course."

"These resolutions make it impossible for the graduates of schools which give two graduating courses in each year, or which do not require an interval of at least six months between each course, to practice medicine in any of its departments in the State of Illinois. This action has led to the extension of the lecture term and the abandonment of the two-term system in one of the medical colleges of Chicago—the "eclectic." It is believed that this action has had some influence on medical colleges outside of the State. In other words, the action of the board under the law has been the means of bettering a certain class of medical institutions, whose status in the estimation of the profession was somewhat equivocal. The execution of the law has also given encouragement to the legally qualified physicians. It has secured for them more honorable association, and has given to them the means of certifying to the public their own claims to the confidence of the people."

The following is the text of the schedule of minimum requirements:

I. *Conditions of admission to lecture-courses*.—1. Credible certificate of good moral standing. 2. Diploma of graduation from a good literary and scientific college, or high school or a first-grade teacher's certificate. Lacking these—a thorough examination in the branches of a good English education, including mathematics, English composition, and elementary physics and natural philosophy.

II. *Branches of medical science to be included in the course of instruction*.—1. Anatomy. 2. Physiology. 3. Chemistry. 4. Materia Medica and Thera-

peutics. 5. Theory and Practice of Medicine. 6. Pathology. 7. Surgery. 8. Obstetrics and Gynecology. 9. Hygiene. 10. Medical Jurisprudence.

III. *Length of regular graduating courses.*—1. The time occupied in the regular courses or sessions from which students are graduated shall not be less than five months, or twenty weeks, each. 2. Two full courses of lectures, not within one and the same year of time, shall be required for graduation with the degree of Doctor of Medicine.

IV. *Attendance and examination or quizzes.*—1. Regular attendance during the entire lecture courses shall be required, allowance being made only for absences occasioned by the student's sickness, such absences not to exceed twenty per centum of the course. 2. Regular examinations or quizzes to be made by each lecturer or professor daily, or at least twice each week. 3. Final examinations on all branches to be conducted, when practicable, by competent examiners other than the professors in each branch.

V. *Dissection, clinics and hospital attendance.*—1. Each student shall have dissected during two courses. 2. Attendance during at least two terms of clinical and hospital instruction shall be required.

VI. *Time of professional studies.*—This shall not be less than three full years before graduation, including the time spent with a preceptor, and attendance upon lectures or at clinics and hospital.

VII. *Instruction.*—The college must show that it has a sufficient and competent corps of instructors, and the necessary facilities for teaching, dissections, clinics, etc.

Diplomas of colleges whose educational requirements and methods of instruction fall short of the above schedule are not recognized as entitling their possessors to certificates authorizing them to practice in the State of Illinois. (This does not apply to diplomas issued prior to the sessions of 1883-84, but only to those issued at the close of said sessions and subsequently). The only way in which holders of such diplomas may legally enter upon practice in the State is by passing a satisfactory examination before the board on the branches or subjects of the schedule omitted.

This schedule is, therefore, the test of the "good standing" of a medical college in Illinois. Only colleges which come up to this minimum standard are accounted as in "good standing." To determine the status of any given institution, it only necessary to compare the summary of the institution set forth in the Annual Reports of the Board on Medical Education with the above schedule.

As showing the increasing extent to which the schedule is complied with, the following comparisons are of interest: There are now 114 colleges which exact an educational requirement as a condition of matriculation; in the first report there were only 42. Attendance on three or more lecture-courses before graduation is now required by 41 colleges, as against 22 heretofore; and provision is made for a three or four-year graded course by 48 others. Hygiene is now taught in 110 colleges, and medical jurisprudence in the same number, as against 42 and 61, respectively, heretofore. The average duration of lecture-terms has increased from 23.5 weeks to 23.8; 9 more colleges have lecture terms of five months or over, and 13 more have terms of six months or over, as compared with the sessions of 1882-83. These

changes have all been made in the medical colleges of the United States, no material alteration in the Canadian schools having taken place in these respects.

Fears have been entertained that a law, such as that placed upon the statutes of Illinois, could not be executed; that it must remain a dead letter; that it would be impossible to hunt up and investigate and determine the status of the thousands of practitioners scattered from the lake to the river. This task is no doubt a difficult one, and would be more so but for the existence of the State Board of Health and the provisions of the organic law requiring the registration of practitioners as a part of the machinery necessary for securing the vital statistics of the State. The State board requires a registration in the office of the county clerk of each county of every person practicing medicine or midwifery. The neglect of such registration subjects the person so neglecting to the penalty for the violation of the law regulating the practice of medicine. It will be easily seen that if a few only of the practitioners become registered it will be for their interest to determine the fact that all others are also registered. In this way every practitioner who has complied with the law is made an aid to the State Board in the execution of its provisions. It has been found to be practically the fact that in many counties not a single person is engaged in the practice of medicine who has not complied with the law, and this not so much through the immediate intervention of the State Board as through the action of the local physicians. A suspicion that a neighboring or competing practitioner has not complied with this law, or that he is disqualified by law, leads at once to an investigation, and, in case of the neglect or refusal to comply or qualify, to prosecution. The authority of the board to revoke licenses has been tested in the courts and so far has been sustained. Dr. Johnson concludes as follows:

"In view of all these facts, it is quite evident, I think, that it is possible to regulate the practice of medicine and to vastly improve its condition, and that this can be done and probably best done by State boards of health.

"In conclusion, the writer begs leave to suggest that it is the duty of the State to protect its citizens from the injuries they may sustain from the practice of incompetent physicians and surgeons as well as from any other source of danger to public health. The mode in which this protection can be best extended is one upon which there may be differences of opinion; in fact, there may be different modes equally efficient. But that adopted by the State of Illinois, if it could be carried still further and made more complete in this investigation of the status of every practitioner of medicine, would, as it seems to me, be amply sufficient. A diploma from any medical college ought not to be accepted of itself as the evidence of a qualification for the discharge of the duties of the profession. It is true a board invested with the power of discriminating like that of this State perhaps may be trusted to determine what colleges do give their graduates an education qualifying them for these responsible possibilities; but, practically, it is found very difficult to make such discrimination. An examination should be held of every practitioner of medicine; that examination, if successful, should entitle him to a license to practice. The colleges would then be relegated to their legitimate places as teaching bodies, and not as bodies empowered to give authority to practice. The colleges that have the best teachers, whose

students are most successful in passing this examination, and which are therefore evidently rendering to the community the highest services, would become the most popular, and would justly receive at the hands of the public that recognition which they deserve."

It would occupy too much of the time which the Conference can devote to the consideration of these questions to discuss other points. Sufficient has probably been said to indicate the grounds upon which I would base affirmative answers.

If it is desirable that one State board should establish a given policy toward medical colleges and medical education, there is no reason apparent why all such boards similarly constituted and acting under similar authority should not unite in a uniform policy. Such uniformity, the result of a consensus of a number of boards, would strengthen the action and influence of each individual board, giving it, practically, the moral force of the entire number.

As to the feasibility of such action, that is a matter which has already settled itself in all but mere formal expression. The State boards of the five States mentioned are already united in an almost perfect concert of action.

Dr. Hewitt said the State Board of Health of Minnesota was in no way responsible for medical examinations, and that the examining board had no connection with the State Board of Health.

Dr. C. W. Covernton thought that in Canada the examinations were very thorough.

Dr. Rauch said that so far as Canada was concerned, the medical education, before the degree of M. D. is granted, or before any degree is granted, is much more thorough than in the United States. It was hoped soon to have the medical education in the United States, if not as good as in Canada, at least nearly so.

Dr. William Canniff, of Toronto, thought some measures should be adopted to protect the profession against quacks.

The following propositions from Kentucky:

"What have been the actual practical results secured, outside of large cities and towns, in preventing the spread of scarlet fever, measles, diphtheria, and typhoid fever? and how is the co-operation of the medical profession and general public best secured in such work?"

The discussion of the three questions embraced therein was opened by Henry B. Baker, M. D., Secretary of the Michigan State Board of Health, who, after preliminary remarks, presented the following:

The Michigan State Board of Health was established in 1873. Late in that year the board issued a circular to physicians stating the duties of physicians and others under the law in dealing with "small-pox and other diseases dangerous to the public health;" also showing the relative danger to the public health from the various communicable diseases. The circular showed that scarlet fever caused more deaths by far than small-pox, and it was urged that if scarlet fever was properly restricted, the deaths from this disease might be greatly lessened. The circulars were distributed to the physicians throughout the State. From that time forward scarlet fever in Michigan has been treated by the State Board of Health as a dangerous communicable disease, and at present isolation and disinfection are generally enforced by local boards.

I submit a table (No. 1), in which the deaths from scarlet fever reported to the Secretary of State as having occurred in Michigan during the five years (1869-73) immediately preceding the organization of the State Board of Health, is compared with the eleven years 1874-84, since the Michigan board was established.

TABLE 1.—Deaths from scarlet fever, reported to the Secretary of State as having occurred in Michigan during the five years, 1869-73, compared with the eleven years, 1874-84; 1873 being the year, in the latter part of which the Michigan State Board of Health was established and began its work. Also a comparison of the three years, 1874-76, with the eight years, 1877-84; the document on the restriction and prevention of scarlet fever having been issued by the State Board of Health in 1877, and distributed each year since that date:

YEARS. (Five.)	DEATHS.	YEARS. (Elev'n)	DEATHS.	YEARS. (Three.)	DEATHS.	YEARS. (Eight.)	DEATHS.
1869	252	1874	440	1874	440	1877	404
1870	352	1875	423	1875	423	1878	429
1871	696	1876	399	1876	399	1879	418
1872	565	1877	404	.....	.....	1880	370
1873	580	1878	428	.....	.....	1881	383
.....	.....	1879	418	.....	.....	1882	592
.....	.....	1880	370	.....	.....	1883	673
.....	.....	1881	383	.....	.....	1884	326
.....	.....	1882	592	.....	.....	.....	.....
.....	.....	1883	673	.....	.....	.....	.....
.....	.....	1884	326	.....	.....	.....	.....
Sums.....	2,945	.....	4,857	.....	1,262	.....	3,595
Averages.	589	.....	442	.....	421	.....	449

In table 1, I have also studied the effect of the circulation of a document giving detailed information relative to the restriction and prevention of scarlet fever. Such a document was issued by the Michigan State Board of Health in 1877, and has been thoroughly distributed each year since. I have compared the three years 1874-76, just before the document was issued with the eight years 1877-84 since it was issued. Although the average number of deaths reported annually in the latter period is slightly greater than during the three years immediately preceding, partly because the eight-year period contains an epidemic year, there was not an increase but a decrease in the

proportion of deaths to population. This is shown in the Exhibit No. 1 in which allowance is made for the actual increase of population, and it is found that during the time of the distribution of the document there was a saving of sixty-four lives per year, or 512 lives during the eight years compared with the three years in which the State Board labored to prevent the spread of scarlet fever, but did not distribute a document containing full directions how to restrict the disease. By Exhibit 1 it will be seen that during the entire period since the organization of the State Board of Health, the average deaths per year were 2.1 per 10,000 inhabitants less than in the period previous to that time. The average annual population during the eleven year period is estimated from the population as stated in the Michigan manual to have been 1,609,023. This indicates a saving of 338 lives per year, or 3,718 lives saved from death from this one disease, during the first eleven years after the State Board of Health was established. (Statistics for 1885 and 1886 are not yet available.)

EXHIBIT 1.—*A comparison of the deaths from scarlet fever reported to the Secretary of State as having occurred in Michigan during the five years (1869-73), just preceding the organization of the State Board of Health, with the three years (1874-76) immediately succeeding its organization, and those three years (1874-76) with the eight years (1877-84), during which the document on restriction of scarlet fever was distributed; also the five years (1869-73), just before the establishment of the board, with the eight years (1877-84) during the use of the document; and finally a comparison of the five years (1869-73), just preceding the work of the board, with the eleven years (1874-84) since the State Board of Health was established:*

PERIODS OF TIME COMPARED.	Estimated average population	Average deaths reported per year.	Total reported deaths.	Average reported deaths per year p'r 10,000 inhab'ts.	Decrease of Deaths per year per 10,000 inhabit's	†Average decrease of rep'd deaths per year.	†*Lives probably saved, accord'g to the reports.
{ 5 years, 1869-73.....	1,215,220	589	2,945	4.85	.....	.....	.....
{ 3 years, 1874-76.....	1,384,515	421	1,262	3.04	1.81	252	756
{ 3 years, 1874-76.....	1,384,515	421	1,262	3.04	.....	.....	.....
{ 8 years, 1877-84.....	1,689,988	449	3,595	2.66	.38	64	512
{ 5 years, 1869-73.....	1,215,220	589	2,945	4.85	.....	.....	.....
{ 8 years, 1877-84.....	1,689,988	449	3,595	2.66	2.19	370	2,961
{ 5 years, 1869-73.....	1,215,220	589	2,945	4.85	.....	.....	.....
{ 11 years, 1874-84.....	1,609,023	442	4,857	2.75	2.10	338	3,718

\*Probably not all deaths were reported before or since the organization of the board, consequently the saving is probably greater than is here shown.

†Allowing for increase of population.

In Table No. 1 it is seen that during the eleven years of the work of the State Board of Health, the deaths from scarlet fever, as reported to the Secretary of State, were reduced in the aggregate about one-fourth, notwithstanding the increase of population. Although this is an important reduction, Table No. 2 shows that small-pox was reduced about two-thirds. The greater success in restricting small-pox is probably due to the fact that for small-pox we have the additional advantage of vaccination in preventing and modifying the disease.

TABLE 2.—Deaths from small-pox reported to the Secretary of State as having occurred in Michigan during the five years, 1869-'73, compared with the eleven years, 1874-'84; 1873 being the year, in the latter part of which the Michigan State Board of Health began its work. Also a comparison of the four years, 1874-'77, with the seven years, 1878-'84; the document on the restriction and prevention of small-pox having been issued by the State Board of Health in 1875, and distributed each year since that date:

YEARS. (Five.)	DEATHS.	YEARS. (Eleven)	DEATHS.	YEARS. (Four.)	DEATHS.	YEARS. (Seven)	DEATHS.
1869	42	1874	18	1874	18	1878	6
1870	9	1875	26	1875	26	1879	6
1871	73	1876	76	1876	76	1880	3
1872	302	1877	102	1877	102	1881	82
1873	90	1878	6	.....	.....	1882	100
.....	.....	1879	6	.....	.....	1883	5
.....	.....	1880	3	.....	.....	1884	3
.....	.....	1881	82	.....	.....	.....	.....
.....	.....	1882	100	.....	.....	.....	.....
.....	.....	1883	5	.....	.....	.....	.....
.....	.....	1884	3	.....	.....	.....	.....
Sums.....	516	.....	427	.....	222	.....	205
Averages.	103	.....	39	.....	56	.....	29

EXHIBIT 2—A comparison of the deaths from small-pox reported to the Secretary of State as having occurred in Michigan during the five years (1869-73), preceding the organization of the State Board of Health, with the four years (1874-77) immediately succeeding its organization, and those four years (1874-77) with the seven years (1878-84), during which the document on the prevention of small-pox was distributed; also the five years (1869-73), just before the board was established, with the seven years (1878-84) during the use of the document; and finally a comparison of the five years (1869-73) just preceding the work of the board, with the eleven years (1874-84) since the State Board of Health was established:

PERIODS OF TIME COMPARED.	Estimated average population	Average deaths reported per year.	Total reported deaths.	Average reported deaths per year per 100,000 inhab'ts.	Decrease of deaths per year per 100,000 inhab'ts.	Average decrease of rep'd deaths per year.	*†Lives probably saved, accord'g to the reports.
{ 5 years, 1869-73.....	1,215,220	103	516	8.48	.....	.....	.....
{ 4 years, 1874-77.....	1,409,758	56	222	3.97	4.51	64	256
{ 4 years, 1874-77.....	1,409,758	56	222	3.97	.....	.....	.....
{ 7 years, 1878-84.....	1,696,034	29	206	1.71	2.26	38	268
{ 5 years, 1869-73.....	1,215,220	103	516	8.46	.....	.....	.....
{ 7 years, 1878-84.....	1,696,034	29	206	1.71	6.77	115	806
{ 5 years, 1869-73.....	1,215,220	103	516	8.48	.....	.....	.....
{ 11 years, 1874-84.....	1,609,023	39	427	2.42	6.06	98	1,073

\*Probably not all deaths were reported before or since the organization of the board, consequently the saving is probably greater than is here shown.

†Allowing for increase of population.

In order to ascertain the advantage of the distribution of the "Document on the Restriction and Prevention of Small-pox," I have made in Exhibit No. 2 a comparison between the periods of restriction without the document and the period of restriction with the document; that is, a comparison of the

period 1874-77 with the period 1878-84. This indicates that during the time of the circulation of that document there was saved an average of 38 lives per annum, or 266 lives during the seven-year period. The total number of deaths from small-pox reported to the Secretary of State during that period was 205, which was 31 less than half the number which would have been reported if the deaths from small-pox had continued at the same rate as during the four years just preceding the distribution of the document.

In Exhibit No. 2 it may be seen that during the entire period since the State Board of Health has been working, the average deaths from small-pox were 6.06 per 100,000 inhabitants less than during the period of five years just before the establishment of the Board. This shows a saving of 98 lives per year, or 1,073 lives saved during the period of eleven years; that is, there were 1,073 less deaths from small-pox during this period than there would have been had the deaths continued at the same rate as before the work of the Board commenced.

Thus, from the two diseases, scarlet fever and small-pox, there is indicated by the statistics in the office of the Secretary of State to have been a saving of nearly 5,000 (4,791) lives in Michigan during the eleven years following the establishment of the State Board of Health.

In my opinion, the co-operation of the medical profession can be and is best secured by educating the people who employ and pay physicians, so that the people will prefer the physician who acts for the prevention of disease rather than the one who does not so act. Public sentiment will then make co-operation easy. It is asking too much of the medical profession to ask physicians to go far in advance of public sentiment in efforts for preventing the spread of communicable diseases. Self preservation is as much a "first law of nature" to the medical profession as to other classes of human beings. It is fair to assume that, in the future as in the past, physicians will continue to lead in philanthropic work, especially in this branch of sanitary reform, but I consider it the duty of practical sanitarians—certainly the duty of all of us who are connected with State Boards of Health—to see to it that, so far as possible, public sentiment be constantly advanced so as to keep pace with the rapid progress in the medical profession. If we expect physicians to co-operate with us in efforts to prevent the spread of consumption, or any one of the diseases mentioned in the proposition, we must ourselves lead off, and allow them to co-operate, and not expect them to do all of the work.

One of the best methods of securing the co-operation of the general public is the popular sanitary convention. Here scientific nomenclature is cast aside, and the truths of science are clothed with the language of the people. Here statistics become charged with the enthusiasm of the speaker, the inattentive become attentive, and the blind begin to see. Two or three such conventions are held in Michigan every year. At times very large audiences attend. They command a large amount of space in the local papers and in the daily press of the State, and after the convention 2,000 copies of the proceedings are printed and distributed among those people likely to read them. Papers have been read before these conventions by many of the most prominent ministers, lawyers, professors and doctors of the State.



Another way to compel the attention of the people is to take them when they are threatened with disease and death. For some time the Michigan State Board of Health has been in the habit of sending to those localities in the State where a dangerous communicable disease is known to exist, copies of a pamphlet on the restrictions and prevention of that particular disease. These pamphlets have been distributed among the neighbors of those sick with the disease, and have been pronounced by health officers "a great help in restricting the spread of the disease." But the educational effect of the distribution of these pamphlets in this manner—their effect in forming public sentiment favorable to the restriction and prevention of disease, is of even greater prospective importance than is the immediate result.

Dr. Abbott, of Massachusetts, did not want to say a word against the value of statistics, but it seemed to him that it was unfair to take the year 1872 for the purpose of comparison. That year throughout the whole of the United States was a very bad one for all sorts of disease, and particularly for small-pox, and he thought it was not right to select that year for comparison. A great deal could be accomplished by the compilation of statistics, but the tendency is to interpret too much from the figures themselves.

Dr. Hewitt said that if it was true that there had been a diminution in disease in Michigan since the organization of the State Board of Health, owing to the distribution of circulars and other documents, then there was a new means of prevention. He thought the distribution of circulars was not of so much account as the distribution of men. He thought a great deal of the work they were accomplishing was due to the support of the medical profession. Not that they were educating the profession up to their standard, but they were going with the profession up to a standard that was held in common. If in a district where an epidemic is prevailing there is a good physician, he carries more influence with him than any document possibly can. Statistics become of value when they have covered a century of observation. A remark was made to him which he thought very applicable. A physician who had given considerable thought to the subject, and could not always make results harmonize with theories, said at last: "Doctor, I have got my deaths down to such a rate I am going to die this year while the statistics figure right."

Dr. Hibberd said it did not matter how much authority a person had, he can accomplish but little without the support of the peo-

ple. He was ready to affirm that they would never succeed in doing the best possible work until people are educated up to the support of the authorities.

E. C. Jordan, C. E., of Maine, thought there was a value in statistics. When a man died he wanted a table of statistics to show what it cost that community, and by this means he would prove to the community what they could save by lowering their death rate. He would like to have Dr. Baker show what it cost the State to lose one hundred individuals: cost of funeral expenses, cost of sickness, etc. He thought such a table of statistics would make practical work in sanitary reform strong.

Dr. Hewitt said he valued the use of documents and he valued the statistical work of Dr. Baker; he was a model in this direction; but when it is supposed that these statistics are the result of the distribution among the people of a document published by anybody, he thought it was a mistake to lay the cause there, or largely there. As to the use of dogmatic power in the administration of sanitary law, he thought there was no necessity for it; persuasion is of more value.

Dr. Baker said that circulars were sent to the neighbors of the persons sick, and he found that the people did read them, and for this reason: say they have small-pox, they want to know what they shall do to escape the contagion, and it is just such information that is contained in these circulars. He said that the statistics of States and cities did not agree with the statement made by Dr. Abbott; even the table he had just presented proved Dr. Abbott's statement an error, so far as relates to scarlet fever; and the table relative to small-pox contains *two* epidemic years since the organization of the Michigan Board, which should offset the epidemic year, 1872. The good results of the work in Michigan were greatest, however, in epidemic years.

Dr. Holt, of Louisiana, had not gathered from Dr. Baker's paper that he sat in his office and did nothing but send out these circulars and tracts among the people; but rather that they were an adjunct to his labors, and it has been their own experience that circulars sent in this manner, giving in detail instruction in case of diphtheria, for instance, or scarlet fever, small-pox, or yellow fever, and giving explicit directions as to sanitary affairs, does give great assistance. It educates the people. It prepares the way, by educating the mind,

for the reception of the power that had been referred to as dogmatic power. He said that Dr. Hewitt spoke of doing things by means of kindly suasion and without resort to power. If a parent or school master undertakes to treat his boys with kindly suasion, and these boys find it out, they are going to walk over that teacher; but when they know that behind that kindly suasion is a rod, they very seldom require the rod. Boards of health must have the power in order to exercise with effect the kindly suasion. In times of excitement, when the public mind is greatly disturbed, he thought there was nothing in the world equal to the distribution of these little circulars and pamphlets to reassure them.

“What should be the basis of compensation for local health officers?”

Dr. G. B. Thornton, member State Board of Health of Tennessee, considered that the proper pay of a health officer must be determined by the amount of work and responsibility incident to his office. So far as his knowledge went, as a rule health officers are underpaid. When the duties of the office require the greater part of the officer's time he should be paid a salary which would enable him to give up all private practice and devote all his time to the public service. Assuming that the health officer is an experienced physician, and in his opinion none other should hold the office, he thought he should be paid from \$100 to \$250 a month, or from \$1,200 to \$3,000 a year, owing to circumstances as indicated, when the duties of the office require much of the officer's time. In some instances he thought this sum would be inadequate, for example, when the responsibilities are great and the public service requires his whole time. When the office is very little more than advisory, and secondary to private practice and other private interests, the pay should be determined accordingly. As a rule the salary of the health officer is too low. The duties require education, expert knowledge, moral courage and time, and he should be compensated as other professional men for like service, and be held to strict account for efficient work. A good officer is never overpaid; a poor one is not cheap at any price.

Dr. S. W. Abbott said it was a subject with which he had had no experience. He thought such officers should be well paid. In the cities of his State they were paid fair salaries. Their salaries range all the way from nothing up to \$3,000.

Mr. Jordan thought the compensation of the local health officer would be the same as that of the selectmen—two or three dollars per day when at work.

Dr. Abbott said it might be so in certain localities. In his State the local boards of health were defined by law as independent boards when the towns elect them; when they do not, the selectmen are the boards. In some cases they are paid by the day. In the large cities, of which there are some twenty-two or twenty-three, the compensation is fixed.

Dr. McCormack said the question was of very great importance to the western and southern States. The object his board had in submitting this question was to get at the practical results that had been arrived at in other States, as to what was the basis of compensation for health officers, more particularly in reference to small towns and cities, and he was sure there must be members present who were familiar with the subject.

Dr. Baker said the health officer of Detroit is paid \$3,000 per year. Some of the smaller cities pay smaller salaries. His city (Lansing) pays \$300. It is one of the most important things to be considered how the health officer should be paid. He should receive proper compensation, and some way should be devised to secure it. His State had passed a law relative to the duties of the health officer, providing that if he performed these duties he should receive not less than two dollars per day. That law stands to-day.

The following subject was considered:

“Investigation of the causes of disease. How can State Boards of Health secure the best results?”

Dr. Fisher opened the discussion by saying that the question to be considered by the Conference was the advisability of planning some method of utilizing the great mass of material that might be obtained through the physicians of the various States. He thought the subject should be taken into consideration by a committee during the year and a report made at the next meeting of the Conference. If it seemed advisable, they might report plans and methods of procedure, even, perhaps, to the circulars of inquiry, the questions to be submitted and the manner of recording the facts. He thought

that by distributing proper circulars and blanks to the great mass of physicians they would be able to return a great deal of valuable information upon some one line of inquiry. At any rate it would be of advantage to the physician in inducing them to observe and record their observations, and by this means there would be an advance in the qualifications of those engaged in the work. From the circulars distributed facts could be recorded and returned to the board, and the facts thus presented could be classified and some really logical conclusions might be drawn therefrom. He desired the opinion of the Conference on this subject.

Dr. Henry B. Baker, of Michigan, said :

Elsewhere and heretofore, sickness statistics, for a long period of time, have only been obtained for a few communicable diseases, with regard to which compulsory notification is enforced ; but we now have established, in the State of Michigan, a system which enables us to have reliable statistics of sickness from all the important diseases. The system is based upon the law of averages,—which makes it probable that one hundred or more physicians in active general practice in different parts of the State will, on the average, see an average of the several diseases which ordinarily occur ; and those are the diseases which cause most sickness and most deaths, and consequently are the diseases which it is most important to study, with the view to learning the manner of their causation. The reports concerning sickness published by the Michigan State Board of Health show the relative prevalence of sickness from each important disease, in each month, and in each year, and from each disease compared with other diseases ; they thus show the relative danger from each disease compared with other diseases, and compared with the same disease in other years, or in other months in the same year. These statistics are based on the actual observation of physicians in different parts of the State. It has been alleged that these statistics give only the *opinions* of physicians ; (Public Health: Transactions of Am. Public Health Association ; Vol. XI., page 60) ; but this is an error, the weekly reports of sickness now being statements of fact as to whether the physicians did or did not observe the disease in question during the week for which the report was made.

"Collective Investigation of Disease" has thus in Michigan been put upon a scientific basis. It must, I think, be admitted that for the purpose of learning the causes of diseases, sickness statistics are far more valuable than statistics of deaths, therefore as an answer to this question before the conference, I respectfully submit our present methods in Michigan, namely, weekly reports by representative physicians of all sickness under their observation, together with regular observations, by representative meteorologists, of conditions likely to affect diseases. I here submit a copy of the postal blank used in Michigan:

*Diseases in* ..... [and vicinity?] .....  
 [PLEASE DATE.]  
*week ending Sat.* ..... 188.....

No. ....	Prevalence. Order. See a.	Cases.
<b>ED 25.</b>		
<p>a. Please mark the disease of which there is the greatest number of cases, 1; the disease having next greatest number of cases, 2; the next, 3; and so on for each disease, writing the same figure opposite diseases having the same number of cases. Write opposite each disease of which there is no case under your observation. [For full statement, if plain, see second, third, and fourth pages of record-book cover.] A blank indicates that the item has been overlooked.</p> <p>Please mail this, signed and dated, as soon as convenient after close of week specified.</p>	Brain, Inflammation of.....	
	Bowels, Inflammation of.....	
	Bronchitis.....	
	Cerebro-spinal Meningitis.....	
	Cholera Infantum.....	
	Cholera Morbus.....	
	Consumption Pulmonary.....	
	Croup, Membranous.....	
	Diphtheria.....	
	Diarrhea.....	
	Dysentery.....	
	Erysipelas.....	
	Fever, Intermittent.....	
	Fever, Remittent.....	
	Fever, Typhoid (Enteric.).....	
	Fever, Typho-malarial.....	
	Influenza.....	
	Kidney, Inflammation of.....	
	Measles.....	
	Neuralgia.....	
	Pneumonia.....	
	Puerperal Fever.....	
	Rheumatism.....	
	Scarlatina.....	
	Small-pox.....	
	Tonsillitis.....	
	Whooping-cough.....	

This Report is of diseases under your observation; if it includes a contagious disease, please mention, on the bottom or margin of this card, the township, city, or village in which the disease is.

....., M. D.

Dr. Wm. H. Cretcher, President State Board of Health of Ohio, suggested that there was no better way of getting at the facts relating to the cause of disease, than by the system adopted by the British Medical Association. They issued a circular and distributed it through their journal to all their subscribers, some 12,000, the questions to be answered by the individual according to his own experience and observation. He thought the point well taken that if scientifically carried out great benefit could be derived from this manner of investigating disease. One subject at a time he considered sufficient to be reported from. There should be a committee

appointed at this meeting to carefully codify questions pertaining to particular diseases. The answers should be in accordance with actual observations and not theoretical.

Dr. Fisher tully agreed with the last speaker, that nothing but facts were wanted, without theories or opinions. He moved that a committee of five be appointed by the Conference to devise a plan for obtaining facts from the physicians in the several States through the State Boards of Health, and that the committee report at the next annual meeting of the Conference.

Dr. Fisher's motion was put and carried, and the following committee appointed :

Dr. Charles H. Fisher, Secretary State Board of Health, Rhode Island.

Dr. S. W. Abbott, Secretary State Board of Health, Massachusetts.

Dr. Benjamin Lee, Secretary State Board of Health, Pennsylvania.

Dr. P. H. Bryce, Secretary Provincial Board of Health, Toronto, Ontario.

Dr. G. B. Thornton, member State Board of Health, Tennessee.

Adjourned to 8 o'clock P. M.

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## EVENING SESSION.

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The Conference met according to adjournment. The question of converting the Conference into a section of the American Public Health Association, under the following resolution adopted by the American Public Health Association at its Thirteenth Annual Meeting, was taken up :

*“Resolved, That the representatives of State Boards of Health constitute a section of the American Public Health Association, to be called the ‘Section of the State Boards of Health,’ which shall elect its own Chairman and Secretary ; and that the executive committee, through the Secretary, arrange for the meetings of this section on the day preceding the general session of the American Pub-*

lic Health Association; and that the executive committee arrange a day, or portion of a day, during the general session for the exclusive consideration of matters relating to State Boards of Health, and for the reception of reports and propositions from the section of State Boards."

On motion, it was voted that the resolution be received for consideration.

The State Board of Health of Kentucky, through its Secretary, Dr. J. N. McCormack, offered the following as a substitute:

*"Resolved, That the representatives of the State Boards of Health constitute a section of the American Public Health Association, to be called 'Section 1 of the Conference of State Boards of Health.' This section shall hold its annual meeting at the place and on the day preceding the meeting of the Association, and at such other times and places as it may find necessary; shall elect its own officers and make its own rules, and shall present so much of its work as it may think proper, to the Association, subject to the approval of the executive committee of that body."*

After a long discussion, participated in by several members of the Conference, the substitute and original resolution were laid upon the table.

The committee appointed at the morning session to take into consideration the subject of transportation of the bodies of deceased persons on lines of public travel, reported through Dr. Benj. Lee, chairman, as follows:

*To the President and Members of the Conference of State Boards of Health:*

GENTLEMEN:—The committee appointed to consider and remodel the resolutions appearing on the order of business as "Resolutions from Michigan," on the subject of the transportation of dead bodies, beg leave respectfully to report:—

That it appears from replies made to a circular letter addressed by the chairman of the committee on "Preventable Diseases and the Supervision of Travel and Traffic" of the State Board of Health of Pennsylvania, received from State Boards of Health, or health officers in nineteen States that the transportation of bodies of persons dead of small-pox, Asiatic cholera, or yellow fever is neither by statute or by regulation of State Board of Health absolutely forbidden in five States, viz.: Alabama, Indiana, Kansas, Kentucky, Missouri, and that in the other States it is to a great extent practically forbidden, by the action of the transportation companies themselves.



That in nearly all the States certain precautions are enforced in the matter of the transportation of corpses irrespective of the nature of the disease which was the cause of death, either by statute, by regulations of State Boards of Health, or of local boards of health, or of municipal ordinances, and

That, in consideration of the constant necessity for the transportation of dead bodies, from one State into or through another, it is eminently desirable, as well for the avoidance of unnecessary delay and distress to the relatives of the deceased, as for the protection of the public health that there should be uniformity in the provisions adopted by the several States and provinces upon this continent.

In view of the foregoing considerations, your committee respectfully suggests the following substitute for the resolutions referred to:—

*Resolved.* That it is the sense of this Conference

1. That the bodies of persons dead from the following named diseases should not be transported outside of the jurisdiction of the health authorities in which the deaths have occurred, within a period of five years after death, unless such bodies shall have been subjected to cremation, viz.: diphtheria, scarlet fever, small-pox, cholera, yellow fever and typhus fever.

2. That no dead body shall be transported except by permission of the health officer of the locality in which the death occurred, and in case of communicable diseases notice should be given to, and whenever practicable, permission should be received from the health officer of the locality to which it is desired to take the body.

3. That a permit for the removal of a dead body should not be granted only on assurance that it has been suitably prepared for such removal, at the discretion of the local health authority of the place from which it is to be removed.

All of which is respectfully submitted.

BENJAMIN LEE, *Chairman.*

CHARLES H. FISHER.

SAMUEL W. ABBOTT.

It was moved and carried to take up the resolutions separately.

Dr. Hunt, of New Jersey, said he should be sorry to vote for the first resolution. He could not tell why a period of five years should be determined upon. He did not think the Conference was in a position to adopt the resolutions at the present time.

Dr. Joseph Holt, President State Board of Health of Louisiana, did not think these resolutions could be gotten into practical use. To fix a period of five years was practicable only on paper.

Dr. Harding thought it would be better not to transport dead bodies at all. The character of the person who issued the certificate of transportation was not always known, hence the certificate might not represent the true facts in the case.

Dr. Bryce moved that it be recommended by the Conference that bodies dead from any disease named in the report be not transported by rail until thorough disinfection had been practiced, cremation, or such a period of years had elapsed as would practically exclude danger from such source.

Dr. Conn said it seemed that in this discussion a certain amount of ignorance is acknowledged, and still further that there was a lack of confidence in each other. Dr. Harding has no confidence in the certificates coming from the States because he has no acquaintance with the gentlemen who gave them. In New England the transportation certificate simply says that the person died of no contagious or infectious disease, and medical men have done all they can to prevent the spread of disease by dead bodies. If bodies are delivered on the road and become nuisances, it is not the fault of the health officer who gave the certificate, but rather of the friends who persist in carrying about the bodies of the dead. If the Conference says that it will not give its consent, or recommend that any body dead of a contagious or infectious disease be removed, it has done all it can. The permit assures the railroad authorities that they may carry the bodies until they become putrid, without danger to the employes or others. As a Conference, all that can be done is to educate public opinion, and when it says to the public, "you can not carry contagious or infectious diseases on the trains," and the railroad authorities are willing to back it up, all that is possible has been done. It is a matter in which every State must be a law unto itself.

Dr. Harding remarked that he knew from experience that coffins which were reputed to be hermetically sealed were only nominally so.

Dr. Baker said that he had previously stated that his board did not approve of the first resolution. In Michigan bodies are received from other States with an accompanying certificate stating that the persons did not die of a contagious disease, and the cause would be diphtheria or typhoid fever. He desired some action that would do away with this practice.

Dr. Wight, Health Officer of Detroit, Michigan, said they suffered in many parts of the State by the removal of dead bodies. He believed that the removal of the bodies of those who died of diphtheria should be restricted. There was a way to stop it, but not by the adoption of this resolution. There was a way to throw safeguards around the transportation of dead bodies.

The amendment moved by Dr. Bryce was lost.

On motion, voted that the resolution be indefinitely postponed.

The second resolution was then read by the Secretary.

It was moved and seconded that the resolution be adopted.

Motion lost.

The third resolution was then read by the Secretary.

Moved and seconded that the resolution be adopted.

Motion lost.

The next subject taken up was the third proposition from Kentucky, to-wit:

"3. How much in regard to preventive medicine can be taught in public schools of low grade, and what is the best method of such teaching?"

Dr. J. Berrien Lindsley, Secretary State Board of Health of Tennessee, said for many years he had been connected with the school system of his city and State. The school house in the United States in the nineteenth century is what the church was to Europe in earlier times, the sign and source of civilization. The great body of children in the United States stopped with the schools of the lower grade. In traveling over different sections of the country he had observed the uneducated handling the engine and making use of steam although they had no knowledge of the subject of latent heat. He saw the application of the most wonderful discoveries by people of very little education. People suffer from a violation of sanitary laws, and a knowledge of these subjects should be systematically taught. In order to teach the children in the lower grade of schools, those ten or twelve years of age, the teaching must be dogmatic and practical.

Dr. James E. Reeves, of West Virginia, said he would like to ask if this subject could not with equal propriety be discussed before the American Public Health Association.

Dr. Bryce said that for two or three years the Canadian representatives had been greatly interested in the meetings of the American Public Health Association, but it seemed to him to be one of the best ways of killing the Conference, to introduce questions which belonged to that Association.

Dr. McCormack said the duty was imposed upon the State Board of Health of Kentucky of supervising or recommending text-books upon preventive medicine for the common schools of the State, and it submitted these questions because when asked, as the delegated authority of the State, to recommend suitable text books, they were at a loss what to say. Out of the great mass of books calculated for schools, they had been able thus far to find nothing adapted to the use of primary schools, and it seemed to him that there could scarcely be a matter of more importance than the discussion of this question: In what way shall we reach the millions of children now in the schools of the United States and Canada? How shall we reach them so as to impress them and make them remember?

Dr. Bryce thought that no practical results would come from the discussion of the question before the Conference. Inter-state work could be made practical by coming together and applying conclusions. If there was but one day for the discussion of State and Provincial board matters, the Conference had better proceed to some subject more practical.

The following subject was then taken up:

“Inter-state notification in regard to infectious diseases and inter-state co-operation in regard to inspections, and other work for the prevention of the same.”

Upon this subject Dr. Bryce then read the following paper:

REPORT OF THE COMMITTEE ON INTER-STATE AND INTER-PROVINCIAL NOTIFICATION OF INFECTIOUS DISEASES, TO THE NATIONAL CONFERENCE OF STATE BOARDS.

GENTLEMEN—Your committee, in presenting its report, begs leave to state that since the last meeting of the Conference there has fortunately been no great necessity in the northern part of the continent for carrying into practical effect the work proposed at the last conference, as being that which your committee was specially appointed to promote.

In December of last year the Montreal small-pox epidemic had begun to show signs of abatement, but the same precautions previously taken in those States and Provinces lying contiguous to Quebec continued to be necessary until late in February. The freedom from this scourge, in unusually large degree, of those European countries contributing most largely of emigrants to this continent has fortunately prevented the introduction by any avenue of more than a few cases of small-pox during the past season, and no cases of

cholera, as far as I am aware, have been imported during the year to America. While in these matters we have much cause for gratification and thankfulness, it makes the necessity for work by the conference in this direction necessary, remembering the old adage: "In peace prepare for war."

As was generally expected after the discussion last year, officers of States and Provinces, particularly the northern section, have kept one another informed to some extent of cases of small-pox occurring here and there, but the absence of any complete system has prevented this from being done with any degree of thoroughness. As most will remember, a full and complete description of the quarantine system of Canada along the St. Lawrence was given to the American Public Health Association last year, and since that time the energies of all Canadian executive officers, Dominion and Provincial, have been devoted to obtaining those improvements which, in report after report, the chief quarantine officer of the St. Lawrence, located at Grosse Isle, had for years been urging upon the government, and which Dr. Rauch so strongly recommended last year. Such repeated recommendations have, I am happy to report, produced fruit in the shape of supplementary Dominion regulations published in the *Canada Gazette* of August 3, 1886, and, should their execution be thorough, I am sure that the Conference will agree that little more can be wished for. It may be of some interest to state one or two little incidents which have occurred during the past season, which show how essential to continental safety is a wide-reaching, practicable and thorough inspection of passengers at Atlantic seaports, both Canadian and United States. On the 14th of June I was informed that two cases of small-pox had occurred in persons of the crew of one of the fine Lake Superior steamers of the Canadian Pacific railroad. Hearing that no French sailors were employed on these boats, by whom small-pox might have been conveyed from Montreal, etc., I immediately suspected that the infection might have come from immigrants. Proceeding several days later down the St. Lawrence, I learned from Dr. Montizambert that several Russian immigrants had been landed at Grosse Isle with small-pox. Writing immediately to the Traffic Manager of the Lake Superior vessels I learned that a party of Russians had on May 19th taken passage for Manitoba. The steamer of that date was the same as that on which the seamen were who took sick. Later I learned that a case of small-pox had broken out in Chippewa county, Mich., and subsequent events proved that the person attacked had gone to Sault St. Marie on May 19th. Later advices informed me that a case of small-pox had occurred in a woman who had been staying at Immigrant Sheds in Winnipeg when these Russians arrived there. Still later Dakota had a small-pox outbreak in a Canadian family from Manitoulin Island, who, oddly enough, had come south by a local boat, and had gone north on the 19th of May boat. One or two cases occurred about the same time as these in other parts of Michigan and Illinois. Regarding the first I have no definite information regarding the source of the cases in Detroit and Wayne county; but regarding the case in Illinois, Dr. Rauch states that the patient was seen June 12th (five days after she was infected), and as she came by the St. Lawrence and voyaged on a vessel which landed small-

pox at Grosse Isle, it is fair to assume that she contracted the disease on board ship or, perhaps more accurately, on train en route between Quebec and Toronto.

As an incident of these outbreaks I may state that on June 30th, after every case in Owen Sound had been isolated and general vaccination carried on, I received a telegram from Surgeon-General Hamilton asking whether it was not true that a number of cases small-pox had occurred in Ontario and threatening quarantine, if effective precautions were not taken. A telegram with similar inquires a day or two after from Dr. Baker, Michigan, led me to conclude that Dr. Hamilton's information had passed *via* Lansing. The inquiry by Dr. Baker was quite proper and right, but it illustrates the necessity for some system of notification, and for the establishment of greater confidence between State and Provincial officers.

I conceive that the remainder of my report may be made up, in great part, by reference to a question raised by the department at Ottawa in a letter, stating how thorough have been the arrangements made in protecting the Dominion and United States against infectious disease introduced *via* St. Lawrence. I am informed by the Secretary of the Department of Agriculture as follows, regarding information relating to the working of the quarantine regulations supplied him some little time ago:

" OTTAWA, October 2, 1886.

" SIR:—I have to acknowledge your letter of the 22nd ult., in which you request information to be furnished in relation to the quarantine regulations of August 3, last, and in reply to your several questions I have to inform you:

" 1. The pilots of the St. Lawrence have been furnished with copies of the proclamation, and with instructions to supply the shipmasters with copies.

" 2. All shipmasters will be obliged to obey these regulations, as a necessary condition of obtaining customs entry.

" All the mail steamers call at Rimouski, as will all steamers other than mail, arriving during daylight at Grosse Isle; but steamers arriving at night will, for the remainder of the present season, or for such limited time as may be determined, be allowed to pass on to Quebec for inspection by the port physician. But this is only in the event of their having no contagious disease on board. A vessel passing Grosse Isle with contagious disease on board would be simply and absolutely refused customs entry, and be ordered to be sent back. It has been fully explained to the shipping companies that there can be no exception to this rule on any account whatever, and the consequences which would arise to a large steamer from being sent back are of such a nature as to afford a guarantee that no attempt will be made to pass.

" Masters, officers and surgeons of steam or sailing vessels will be examined on oath on a form of questions accompanying the quarantine officer asking such further questions or taking such further steps to elicit the facts as he may find necessary.

" 3. No penalties have so far been imposed for non-compliance with the regulations, which were published for the purpose of conveying the information before the necessary copies could be supplied for distribution by the

pilots, and further for the reason that it was thought advisable to correspond with the shipping companies in order that they might have a thorough understanding of the nature of the arrangements and so take away any excuse for their contravention. I may further inform you that an understanding has been arrived at with the steamship companies to have a thorough inspection by the ship's surgeon within twenty-four hours after leaving port, of all passengers, in order to ascertain the fact of satisfactory vaccination, or of their having had the disease of small-pox within seven years. This examination is now, and has for some time been put into practical effect, a card to indicate the fact being given to each passenger.

"The insistence of the department was that all passengers, including cabin, should pass the examination, but Mr. Andrew Allan, of the Allan line, personally conveyed the information to the department a couple of days ago that in the case of the Atlantic steamers plying between the ports of Liverpool and New York, such inspection is not insisted on in case of cabin passengers. It is a point for the consideration of an international health conference whether the system in this respect should be uniform, as between Liverpool and Canadian ports, and Liverpool and United States ports.

"I have the honor to be, sir, your obedient servant,

"(Signed),

"J. LOWE,

"Sec'y Dep't of Agriculture.

"P. H. BRYCE, Esq., M. D.,

"Sec'y Board of Health, Toronto."

It will be observed from these statements that the remark contained in the last paragraph introduces a question of very serious import to Canadians: Since, if it be true, that the cabin passengers *via* New York and Boston are exempt from examination as to vaccinal protection it is quite plain that the ship companies of the St. Lawrence have good cause for complaint against any regulations discriminating to their detriment and in favor of United States seaports. Gentlemen present can doubtless give us ample information on this point. The details of the St. Lawrence quarantine shall be left by me for amplification and explanation by the quarantine officers of those stations.

Where quarantines have been thorough it is evident that the question of inter-State notification of disease is much simplified on the one side but there is, nevertheless, a great deal of work left for us in other fields. Internal outbreaks may occur, and in the South and along the Mississippi yellow fever may at any time appear. In this work we see already inter-State co-operation under the Sanitary Council of the Mississippi Valley; and there can be no good reason why such organization should not prevail in those States and Provinces east and west, through which European immigration mostly flows. In conclusion, I would propose that the following or similar rules become those of the Association in regard to these matters:

I. That quarantine officers of every port shall notify State and Provincial officers along the lines of immigrant travel that such and such ships have landed passengers suffering from small-pox and other infectious diseases, and that a general statement of the destination of the immigrant passengers from these vessels be given.

II. Should cases occur amongst immigrants *en route* inland, then Provincial and State officers of the district in which the case has occurred shall notify those adjacent and further west along the line of travel.

III. Internal outbreaks of small-pox, etc., in any State or Province, especially when in the person of travellers, shall be reported to officers of adjoining States.

IV. In regard to the transportation of the bodies of dead persons, who have died from infectious disease, the rules for the notification of officers of adjacent States, emanating from the committee of the Conference appointed for that purpose, shall be adopted.

All of which is respectfully submitted.

Dr. Holt, of Louisiana, thought this question was of the utmost importance and that one of greater magnitude could not possibly come before the Conference, and taking into consideration that most of those present were suffering from the fatigue of a long day's journey, the discussion should be postponed until the next day. While the paper set forth the practical working of inter-state notification, it was essential that the subject be thoroughly considered and discussed. It would be found that fundamental principles were involved, without a clear recognition of which, all the resolutions that could possibly be formulated would not be worth the paper upon which they were written.

After considerable discussion as to time, it was finally voted to adjourn to meet at 9 o'clock A. M., Tuesday, October 5.

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### MORNING SESSION—TUESDAY, OCTOBER 5.

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The Conference met according to adjournment. The first subject taken up was "The plumbing of the new capitol of Indiana." Upon this subject the following paper was read by Dr. Metcalf:—

MR. CHAIRMAN AND GENTLEMEN:—The subject to which I desire to call your attention is one which may not be of much moment to you individually or collectively, but it is one of paramount importance to the board which I represent and the people of the State. This importance is heightened by the fact that it will, in all probability, be the subject of legislative investigation. If the positions we take are correct we ask your approval. If otherwise, we wish an expression to that effect.



There is now in process of construction and nearing completion, a Capitol building at Indianapolis, Indiana, which in many respects will be a credit to its projectors and tax-payers.

This structure as provided by law, is under the supervision of four commissioners, of which the Governor is a member *ex-officio*.

They began the erection of this building in 1877, some four years prior to the organization of the State Board of Health. Rumors of defective plumbing and house drainage were afloat, and charges having been made to the same effect, at a meeting of the county health officers held at Indianapolis, February 18, 1886, Dr. J. F. Hibberd, health officer for Wayne County, introduced the following resolution which was unanimously adopted:

*"Resolved, That it is the sense of this convention that the Board of Health should institute such inquiry as shall determine with certainty whether or not there is anything defective in the sanitary arrangements of the State House now under construction, and if anything defective be found in the ventilation, plumbing and drainage of the building or grounds, advise the State House Commissioners of the nature, extent and consequences of the defect, and what should be done to remedy it."*

In conformity with this resolution the Board of Health directed its Secretary to make an investigation of the matters referred to and report to the board.

In obedience to this instruction, investigations were made from time to time which resulted in revealing what we consider serious defects, which are as follows:

*First*—A brick sewer, four feet in diameter, which is a part of the city's sewerage system, passes beneath the building.

*Second*.—Earthenware drain pipes with which the waste pipes from urinals and wash-stands connect, and also the soil pipes from the water closets, enter the sewer beneath the building. These pipes are buried beneath the basement floor and are inaccessible.

*Third*.—In the cellar iron waste pipes enter earthenware pipes, the joints of which are made with hydraulic cement.

*Fourth*.—A soil pipe on the first floor vents into a brick flue which opens into the attic.

*Fifth*.—At the north end of the building a soil pipe vents into the main chimney.

*Sixth*.—The soil pipes are five inches in diameter, and their branches four inches.

*Seventh*.—The waste pipes from urinals are four inches in diameter, and can not be thoroughly flushed by means ordinarily used.

*Eighth*.—No provision has been made for venting the traps to urinals and wash stands.

*Ninth*.—The soil pipes are not provided with fresh air inlets.

We pointed out these defects in a communication addressed to the commissioners April 23, 1886, stating that in our judgment, unless these defects were remedied, the building in the near future would become disease breeding and endanger the health and lives of its occupants.

We object to the sewer because it is a part of the city's sewerage system, draining twenty squares before passing beneath the building. We maintain

that the passage of a sewer beneath a building that is to be occupied by human beings is unsanitary, and not in keeping with modern sanitary teachings.

The commissioners, in a reply dated May 20, 1886, defending the system of plumbing and house drainage which they have adopted, embody a letter written by one Levi R. Green, whom they had employed to examine the work and report the result of his investigations.

They say that this gentleman has a national reputation as a sanitary engineer, and that he has made plans and specifications for plumbing State houses, hospitals, penal institutions and hotels in various parts of the country.

This sanitarian approves of a sewer passing beneath a building that is to be occupied by human beings, and particularly approves of the one that runs under our Capitol building, as he says, because "it is built of brick laid in cement and lined with cement," and that the "basement floor is made of concrete or broken stone laid in cement." This design, in his judgment, "will be altogether satisfactory and successful, and will never be the cause of any evil effects from a sanitary point of view."

He also ventures the opinion "that if the State Board of Health is assigned quarters in the basement of the building, and are permitted to live until they are injured by the gas therefrom they will die a good old age."

In contradiction I will say that the sewer is not cement lined. The sewer and drains of the building are not provided with any means of ventilation, and a standard authority says "unventilated sewers are far more dangerous than steam engines without safety valves."

Neither is it provided with means for flushing except by rain falls which occur in the spring, summer and fall, and flushing in this way can not be thoroughly accomplished.

If this sewer or house drain (which it becomes as soon as it passes beneath the building, as it receives all the sewage of the building within the foundation walls) will not be flushed only as the rain may fall semi-annually as above stated—(and that is what the city engineer says in a letter to the commissioners) what will be the result? Simply this, that the excrement and other filth that is deposited in it during the winter season must lie there to rot, decompose, generate sewer gas and breed disease germs to enter the building through the unventilated house drain and opening which may occur in the same.

This engineer with a "national reputation" (?) says that the basement floor is made of "broken stone laid in cement," but at the same time he fails to mention the fact that many apertures have been made in it for the passage of soil and other drain pipes, thereby leaving convenient breathing places for the foul sewer.

We will state, without fear of successful contradiction, that house drains to be used within a building should never be made of earthenware, cement or brick; and that the only material from which such drains should be constructed is iron. In support of this position, we will quote from standard authorities on sanitary engineering and also part of section four (4) of an ordinance for the regulation of plumbing now in force in the city of Boston, the home of Mr. Green. It is as follows: "Drain and soil pipes

through which water and sewage is used and carried shall be of iron when within a building, and for a distance of not less than five feet outside of the foundation wall thereof. They shall be sound, free from holes and other defects."

William Paul Gerhard, Chief Engineer of Philadelphia, a member of the American Public Health Association, in a work on house drainage and plumbing, says: "Fortunately, however, we can with perfect safety run the drains across the basement floor of a dwelling provided we choose the only safe material, i. e., *heavy iron pipe*."

Baldwin Latham, Past President of the Society of Engineers, London, England, in his work on sewerage and house drainage, says: "It is imperative that all sewers and drains should throughout their entire length, be constructed so as to be perfectly impermeable," also that all ventilating pipes and drains should, as far as practicable, be kept out of the interior of a house and should be so arranged as to be easily examined at any time.

James C. Bayles, Editor of "*The Iron Age and Metal Worker*," in his work on house drainage and water service, says: "I have never seen a house drain built of stone, brick or wood, and rarely one built of earthen pipes with cement joints, which I should be willing to live over. Stone drains having rough inside surfaces can not be effectually flushed and become coated throughout with foul deposits, offensive and dangerous in their rapid decomposition. Brick drains as usually built have this objection, together with the liability of, all but exceptionally good bricks to disintegrate when buried and kept constantly wet. Even when highly vitrified and laid with hydraulic cement, their rough surfaces and perviousness of their joints to water are objections which should exclude them from use for this purpose. *Earthen pipes, even when well glazed, can not be depended upon when laid in cellars, for the reason that the best cement joints are pervious to water, which carries with it organic matter to lodge and decompose in the pores of the pipe and its joints;*" also that "iron is so much better than any substitute yet found for it, that it should, I think, always be exclusively used in the drainage of city houses."

Waring, Helyer and Davis, recognized authorities on house drainage and plumbing, state unequivocally that all sewage should be carried outside the building in iron pipes.

The *Sanitary Engineer*, published in New York and London, and extensively read in the United States, in its issue of January 28, 1886, says: "A brick sewer in a building is out of place. It is a relic of an ignorant age in matters of house drainage and sewerage."

The *Sanitary News*, in its issue of May 29, 1886, in speaking of this sewer, says: "It is shown that in addition to receiving the sewage of the State House, this sewer drains twenty squares of land, and in fact a portion of the regular system of the city's sewerage, a fact which makes its position under a great building all the more reprehensible."

The system of house drainage and plumbing adopted by the Government engineers is probably the latest and most improved, and they do not use brick sewers or earthen drain pipes in buildings. In the postoffice of our city they abandoned the brick sewer formerly in use and substituted iron pipe.

The engines that are to be used in running the machinery of the building (such as ventilating fans, elevators, etc.) are to be exhausted into the sewer. This will cause sudden changes in the temperature of the air, producing unequal air pressure in the drain, which will seek relief at the points most easily forced, which points will be the water-sealed traps and any defects existing in the house drains. The same effects will be produced by the sudden flushing of the sewer by a heavy rainfall.

Another objection which our Board has to the system of plumbing and house draining employed, is that in the cellar iron waste-pipes from urinals and wash-stands enter earthenware pipes, the joints of which are made with cement. The change of temperature, or the alternate passage of hot and cold water through the pipes, will produce sufficient contraction and expansion of the iron to break the seal and render the joints defective.

The reply of the commissioners contains a report submitted to them by the architect and superintendent of the building, in which they say "the plumbing has been arranged in accordance with the cardinal requirements of perfect house drainage; cast-iron pipes for urinals, four inches in diameter, enter vitrified stoneware pipes, eighteen to twenty inches below the basement floor line. The temperature at this level is constant, and in no case will expansion or contraction of a four-inch cast-iron pipe cause a leak at this point." This statement that the connections are buried beneath the basement floor line is not true. The facts are, the connections are above the grade level, where they are liable to be broken at any time by having rubbish thrown against them, and even if they were buried at the depth mentioned, we hold that it is not admissible.

These gentlemen admit that the earthenware pipes are buried from eighteen to twenty inches beneath the basement floor line, and claim this to be in accordance with the "cardinal requirements of perfect house drainage."

We find that leading authors on sanitary engineering lay down principles diametrically opposed to the plan they praise so highly. Sanitary engineers with experience say "the best course of drain in the house is along the ceiling of the cellar, or along the foundation walls." In other words, whenever practicable, the drain should be kept in sight in order to enable anybody to detect a leaky joint at occasional inspections.

Circumstances sometimes "make it necessary to lay the drain pipes below the cellar floor. In such cases it may be laid with proper fall in a trench, the sides of which are walled with brick work, and the base of which should consist of a layer of from four to six inches of concrete, thoroughly rammed and properly graded. The trench should be made accessible by closing it with covers of iron or wood. In no case should a drain that is below the cellar floor be left inaccessible." The drains in the Indiana State House are not laid in accordance with the above, but on the contrary are laid in a crooked and irregular manner with brick walls frequently built across them.

No attention has been given to sanitary methods, either in laying the pipes or making the joints, as in many instances the cement has been simply plastered around the edges of the hubs and has cracked and fallen off. It is admitted by the commissioners, architect and superintendent that a soil pipe on the first floor vents into a brick flue, and maintain that this is in keeping with the latest and most improved methods employed by sanitary engineers.

We hold that this is not admissible and in no instance should a brick flue or chimney be used as a ventilator for soil or waste pipes, on account of the liability of the noxious gasses arising from the pipes permeating their walls and contaminating the atmosphere of the rooms. Rules for regulating plumbing, as far as we have been able to examine them require that "sewer, soil and waste pipe ventilators shall not be constructed of brick, sheet metal or earthenware, and chimney flues shall not be used as such ventilators."

We have objected to the five-inch soil pipes used because we believe that four-inch pipes are sufficiently large for a building with any number of water closets. The smaller pipes can be more thoroughly flushed and do the work of larger ones. We object to the four-inch urinal waste pipes on account of their size, believing that half the size is large enough.

No provision has been made for venting the traps to urinals and wash-stands. We claim that it is as essential that they should be vented as the traps to the water-closets, because they are as liable to become unsealed from syphonage, and if at any time this occurs the unsealed traps will allow a free escape of foul air in the waste-pipes.

The commissioners say "all soil and waste-pipes are trapped at the bottom; fresh air inlets are not provided for, as it is not believed best to do so under existing circumstances. In this latitude cold-air inlets would freeze the traps in the winter time." In the plumbing in the public building at Indianapolis the government evidently has no fear of such an accident, as fresh-air inlets are used.

We are reliably informed that the pure-air inlet is used in all of the best plumbing done in Boston, New York and Philadelphia, in which cities the winters are more severe than in the Capital of Indiana.

Wm. Paul Gerhard, in his work on house drainage and sanitary plumbing, says: "Fresh-air inlets are no less important than the extension of the soil pipes through the roof." In order to effect a constant movement and change of air in the pipes, two openings are required, an outlet and an inlet. The extension of the soil pipe through the roof provides only an escape for the foul air generated in the soil and waste pipes through the decomposition of foul organic matter clinging to the interior and lodging in traps under water-closets and fixtures. But in order to oxidize and render harmless this organic matter undergoing putrefaction within the pipes, a constant introduction of fresh air from the outside atmosphere is necessary. There is a second and almost equally important reason for providing a fresh-air inlet whenever the third requirement, the trapping of the drain, has been complied with.

If a water closet is used or a pail emptied into a slop sink, the water discharged into the soil pipes acts like a piston, and carries the air on its course downward with it by friction. Thus the descending water drives the air before it, and out through the fresh air pipe. If this had not been provided it would very likely force the nearest traps, which are under the fixtures, and send a puff of sewer gas into the rooms.

We might quote from the works of Waring, Helyer and others in support of the fresh air inlet, but we do not deem it necessary.

In conclusion, I desire to propound the following interrogatories:

*First.*—Should the passage of a sewer under a building for human habitation be approved?

*Second.*—Should earthenware drain pipes be used within the foundation walls of a building for the purpose of conveying sewage?

*Third.*—Should iron waste pipes from urinals and washstands connect with earthen pipes within a building?

*Fourth.*—Is the venting of soil pipes into brick flues and chimneys admissible?

*Fifth.*—Is it not as necessary for traps to urinals and washstands to be vented as those of water closets?

*Sixth.*—Should soil pipes be provided with fresh air inlets?

*Seventh.*—Should the sewage of a building be deposited in the sewer within its foundation walls?

I have asked these questions for the purpose of obtaining an expression from you, as these are the points on which our board and the commissioners have joined issue.

Dr. Conn said that before discussing the paper he had a suggestion to make. If he understood Dr. Metcalf right, he desired a full report, but that could be sent to him. It seemed that the paper, with any discussion which might follow, could be referred to a committee with instructions to report to the State Board of Health of Indiana, and he moved that the subject be so referred.

Dr. Canniff, of Toronto, said he wished to support the suggestion of Dr. Conn. It was a subject in which all were interested. The subject would apply to Toronto as well as the place to which it refers. The matter should go to a committee who should consider it and report through the American Public Health Association.

Mr. E. C. Jordan, C. E., of Maine, said that the question had been practically answered by the best authorities, and it would be simply putting their conclusions in a new form. He moved that the committee be authorized to answer any other questions that might suggest themselves in connection with the subject.

The motion was adopted and the following committee appointed: Mr. E. C. Jordan, C. E., of Maine; Dr. Wm. Canniff, Canada; Dr. G. B. Thornton, Tennessee.

The subject of inter-state notification in contagious and infectious diseases was next taken up.

Dr. Joseph Holt, President State Board of Health of Louisiana, said that the question of inter-state notification of disease, theoretically, seemed to be one which disposes of itself. Small-pox breaks

out; under a system of inter-state notification you tell your neighbors and that settles the question. Yellow fever breaks out; inter-state notification—and the question was settled. But in practice when we are obliged to announce the appearance of a pestilential disease by the notification of neighbors, it becomes a vastly more difficult problem. The question involved, first the local out-break of the disease; the extension of the alarm; the commercial disturbance of the locality, neighboring communities and States. It involves the play of human passion, terror in its most abject form, and avarice in the most hideous aspect in which it can be presented. You have to deal with men who place personal gain before the saving of thousands of lives. The next question to be considered are the remedies to be applied. He believed in letting the people know the extent of the danger because by so doing the alarm would be commensurate with the danger. By such a course people would not be frightened beyond the actual limit of the danger. It was hidden danger that paralyzed. He thought that State authorities should recognize the question in all its bearings, and should formulate plans to govern the relation of one State authority to another on this subject. States should have confidence in each other, and upon the out-break of yellow-fever or small-pox their movements should be decisive and determined.

The Conference then adjourned to meet at 5 P. M.

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#### AFTERNOON SESSION—TUESDAY, OCTOBER 5.

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The Conference met according to adjournment and took up the subject under discussion at the last meeting.

Dr. L. F. Salomon, Secretary State Board of Health of Louisiana, offered the following resolutions, which were adopted:

"WHEREAS, It is necessary for the protection and preservation of the public health that prompt information should be given of the existence of cholera, yellow fever and small-pox; be it

"1. *Resolved*, That it is the sense of the National Conference of State Boards of Health that it is the duty of each State, provincial and local board of health in any locality in which said diseases may at any time occur

to furnish immediately information of the existence of such diseases to boards of health of neighboring and provincial States, and to the local board in such States as have no State board.

"2. *Resolved*, That upon rumor or report of the existence of pestilential disease, and positive, definite information thereon not being obtainable from the proper health authorities, this Conference recommends that the health officials of one State shall be privileged and justified to go into another State for the purpose of investigating and establishing the truth or falsity of such reports.

"3. *Resolved*, That, whenever practicable, the investigations made under the preceding section shall be done with the co-operation of the State or local health authorities.

"4. *Resolved*, That any case which presents symptoms seriously suspicious of one of the aforementioned diseases, shall be treated as suspicious, and reported as provided for in cases announced as actual.

"5. *Resolved*, That any case respecting which reputable and experienced physicians disagree as to whether the disease is or is not pestilential, shall be reported as suspicious.

"6. *Resolved*, That any case respecting which efforts are made to conceal its existence, full history and true nature, shall be deemed suspicious and so acted upon.

"7. *Resolved*, That in accordance with the provisions of the foregoing resolutions, the Boards of Health of the United States and Canada represented at this Conference, do pledge themselves to an interchange of information as herein provided."

Dr. G. B. Thornton, of Tennessee, moved that the action of the State Board of Health of Louisiana in dealing with the outbreak of yellow fever at Biloxi, Miss., in August, be commended by the Conference.

Motion adopted.

Adjourned to meet October 6, at 5 o'clock P. M.

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### WEDNESDAY, OCTOBER 6.—5 O'CLOCK P. M.

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The Conference met according to adjournment.

The first subject considered was "the report upon blank forms for uniform system of vital statistics."

On motion made at the meeting of the Conference in Washington, Dr. H. B. Baker of Michigan was appointed to report on the



subject of blank forms for a uniform system of vital statistics. At the meeting in Toronto he made a verbal report covering points somewhat as follows :—

First he undertook to show that the adoption of a uniform system by the several States and provinces throughout this country, at this time, was not advisable. Of course there should be a system for the collection of vital statistics by each State, and uniform throughout the State; but to advise that any system now in use shall apply to every State, is to advise the permanent adoption of an imperfect system. In this, as in other branches of science, perfection can only be reached through taking advantage of useful variation through a considerable period of time; and although each State system must be uniform throughout the State, this does not prevent the adoption of useful, special methods in the large cities within the State, nor of a different system in each one of those large cities, if necessary, in order to conform to local peculiarities of laws or customs. He argued that the most important point to be aimed at first, was that a reliable and earnest man be secured to supervise and make effective some system in each State; and that instead of that man seeking to make his work absolutely uniform with that in other States, he should seek to embody the best parts of the several systems in use in other States and thus aim at an ideal perfect system. To do this, he should have before him the work done by each of the other States, to profit by their failures and by their successes. He should study the best authors on vital statistics, and should have the benefit of discussions in such Conferences as this.

After several had spoken, Dr. Baker replied somewhat as follows :

To the suggestion that he had slighted the subject, and had not given it careful consideration, he replied that this subject was one to which he had given much thought during the last sixteen years, and his report against immediately adopting a uniform system throughout this country was not based upon an impulse of the moment, but was made after careful consideration and reconsideration during many years. If each one of us will strive for a perfect system, some of us may eventually reach such a degree of perfection as that the system may well be made uniform throughout this country; but we are at present far from having reached that perfection.

His report had dealt strictly with the subject of "blank forms," etc., as it had been assigned to him; but the discussion of his report

had largely concerned the methods of collection of vital statistics and what facts should be collected. If he had felt at liberty to have considered these last mentioned subjects, many items that he had not referred to would have been touched upon in his report.

The subject was also discussed by Doctors Hibberd, Cretcher, Metcalf, Conn, Salomon, and Germer.

On motion of Dr. Salomon the whole subject was referred back to the committee with instructions to report at the next meeting of the Conference, including, also, a uniform method of collecting the statistics.

At the meeting of the Conference in Washington, a resolution offered by Dr. Henry B. Baker, of Michigan, was, on his motion, referred to this meeting for discussion. The resolution is as follows:

*"Resolved, That it now seems probable that progress can be made in the restriction of that disease, which in this country causes more deaths than any other disease, namely: consumption, by declaring to the people that care should be taken to destroy or disinfect the sputa from persons suffering from pulmonary consumption."*

In opening the discussion, Dr. Baker said that he had prepared, but would not take the time of the Conference to read, memoranda of recent literature on the subject, embracing examples of direct infection by tubercule, and other considerations tending to show the importance of the disinfection of tuberculous matter. He assumed that all present were familiar with the literature of the subject, and so would proceed to practical questions which we must consider. As a reminder of the importance of consumption as a cause of death, he exhibited a diagram (page 119, report of the Rhode Island State Board of Health, 1885) of the comparative mortality from fifteen most important causes of death in Rhode Island during the twenty-five years—1860–1884, inclusive—showing that the deaths from consumption in that State were more than twice as many as from the next most important cause of death. The question before us was, he thought, whether we were all agreed that consumption can probably be lessened by efforts in this direction. If we are, the sooner the work begins the better; but if we are not, perhaps more harm than good will result by one or more State Boards of Health teaching the people to make such efforts. If the

majority of those who control the State Boards of Health are skeptical, and will not support a movement in this direction, then we must delay action; but if the Conference is strong in the belief that something can be done for the prevention of this most important of all diseases, then his view was that the work for its prevention should immediately begin. He would vote for the adoption of the resolution.

If the resolution shall be adopted, a practical question then is, "How shall we disinfect?" Dr. Baker read from a letter received from Dr. George M. Sternberg, as follows:

"In reply to your letter of September 2d, I would say that I consider the subject referred to one of prime importance. I am decidedly in favor of the adoption of the resolution introduced by you at the last meeting of the Conference of State Boards of Health.

"I consider the oxidizing disinfectants the most useful for the purpose indicated, inasmuch as they destroy the albuminous material in which the bacilli are imbedded and thus permit the disinfecting agent, if present in sufficient quantity, to act directly upon the bacilli and insure their destruction.

"Labarraque's solution, or a solution of chloride of lime, used in sufficient quantity to completely dissolve and destroy by oxidation the sputa and the contained bacilli, seem to me to be the most useful agents for this purpose. So far as cheapness and efficient action are concerned we can scarcely ask for anything better than a solution of chloride of lime containing eight ounces to the gallon of water."

The subject was discussed by Drs. Plunkett, Lee, and Hibberd, and the resolution was unanimously adopted.

The committee to whom was referred the paper by Dr. Metcalf was called upon to report, but the chairman, who had the report in his custody, was absent.

It was voted that the President and Secretary be authorized to receive the report and deal with it in the name of the Conference.

Dr. Salomon moved that a committee be appointed to draft a constitution and set of by-laws, and report at the next annual meeting.

The motion was adopted, and the following committee appointed: Dr. L. F. Salomon, of Louisiana; Dr. Henry B. Baker, of Michigan; Dr. J. D. Plunkett, of Tennessee.

On motion of Dr. Salomon it was voted to assess each State and Province represented at the Conference, five dollars to meet incidental expenses.

Dr. Metcalf offered on behalf of the Indiana State Board of Health, to publish 3,000 copies of the proceedings at a very low figure, and the offer was gratefully accepted.

The following officers were elected for the ensuing year:—

President, Dr. J. N. McCormack, Bowling Greene, Kentucky.

Secretary and Treasurer, Dr. G. P. Conn, Concord, New Hampshire.

The Conference adjourned to meet at 5 o'clock P. M., Thursday, Oct. 7.

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#### THURSDAY, OCTOBER 7.—5 O'CLOCK P. M.

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The Conference met according to adjournment.

Mr. E. C. Jordan, C. E., presented the following report of the committee appointed to consider the subject of the plumbing of the new capitol building of Indiana:—

The committee to whom the following interrogatories from the State Board of Health of Indiana in relation to the plumbing of their State House were referred, beg leave to report as follows:

The questions are—

"*First.*—Should the passage of a brick sewer under a building for human habitation be approved?

"*Second.*—Should earthenware drain pipes be used within the walls of a building for the purpose of conveying sewage?

"*Third.*—Should iron waste pipes from urinals and wash stands connect earthen pipes within a building?

"*Fourth.*—Is the venting of soil pipes into brick flues and chimneys admissible?

"*Fifth.*—Is it not as necessary for traps to urinals and wash stands to be vented as those of water closets?

"*Sixth.*—Should soil pipe be provided with fresh air inlets?

*"Seventh.*—Should the sewage of a building be deposited within its foundation walls?"

Your committee would state that it feels it unnecessary to answer categorically the above questions. There are certain principles in house plumbing that we believe to be upon a solid basis and dangerous to depart from. The foremost of them is that in the removal of the sewage, it shall be done through the medium of heavy iron pipes proportioned to the work to be done, starting from a point at least five (5) feet exterior to the walls of the house, and extending from that point through the house and out of the top to a height determined by surrounding circumstances. Its course should be as direct as possible, and its position, where its inspection would at all times be a matter of observation; in other words, as much in sight as possible.

The question of any trap upon the outfall may be debatable, but your committee think it desirable and especially so from the fact that certain advantages claimed for its absence are much more fully realized by the fresh air inlet. Your committee consider the fresh air inlet an essential. Its action is two-fold. The current of air which it stimulates is a preventive to the formation of gases, and is a medium of safe removal of such as may form. The arrangement of the inlet to prevent freezing is easily provided for, and such a difficulty is in no sense a valid objection to its use. In regard to the large sewer, a part of the city system, we are at a loss to understand the necessity of its location within the walls of the State House building, but if such is the case it undoubtedly should be of heavy iron pipe. Bricks and cement mortar furnish but an imperfect opposition to the passage of sewer gas, and their use within the walls of a habitation as a container, as is the case in a large unventilated sewer, or as both container and conductor, as when the soil pipe is entered into a chimney flue, is of the most reprehensible character.

The data in the fifth question, for its specific application in this case, are insufficient. In general terms it would be answered in the affirmative. We have not thought it necessary to discuss to any considerable degree the reasons for our condemnation of the methods pursued in the Indiana State House, or for those recommended, because it is common knowledge to those who have made themselves competent to judge that the principles in the first case are known to be and found to be vitally defective, while on the other hand those recommended may be considered to have passed through the speculative and experimental period and become fairly fundamental.

We commend the action of the State Board of Health of Indiana in its endeavors to bring about a correction of the errors so manifest in the principles that appear to have guided the plumbing of their new State House, and upon its insistence that the plumbing of its State buildings should always conform to and keep pace with the advances made in sanitary science.

All of which is respectfully submitted.

E. C. JORDAN, C. E.  
WM. CANNIFF, M. D.  
G. B. THORNTON, M. D.

It was voted to hold the next annual meeting of the Conference at Washington, D. C., in September, during the session of the International Medical Congress. Dr. Ralph Walsh was appointed chairman of local committee of arrangements.

Adjourned.

## APPENDIX.

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### SANITARY AUTHORITIES AND ASSOCIATIONS

OF THE

UNITED STATES OF AMERICA AND CANADA.

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#### AMERICAN PUBLIC HEALTH ASSOCIATION.

Dr. George M. Sternberg, U. S. A., Baltimore, Md., President; Dr. Irving A. Watson, Concord, N. H., Secretary.

#### NATIONAL CONFERENCE OF STATE BOARDS OF HEALTH.

Dr. J. N. McCormack, Bowling Green, Ky., President; Dr. Granville P. Conn., Concord, N. H., Secretary.

#### SANITARY COUNCIL OF THE MISSISSIPPI VALLEY.

Dr. John H. Rauch, Springfield, Ill., Secretary.

#### UNITED STATES MARINE HOSPITAL SERVICE.

Dr. John B. Hamilton, Washington, D. C.

#### STATE BOARDS OF HEALTH.

##### ALABAMA.

[The Alabama State Medical Association constitutes the State Board of Health.]

Dr. Jerome Cochran, Montgomery, Health Officer.

##### CALIFORNIA.

Dr. Henry S. Orme, Los Angeles, President; Dr. G. G. Tyrrell, Sacramento, Secretary; Dr. James Simpson, 234 Post St., San Francisco; Dr. R. Beverly Cole, 218 Post St., San Francisco; Dr. W. R. Cluness, Sacramento; Dr. H. C. Crowder, Williams; Dr. J. M. Briceland, Shasta.

##### CONNECTICUT.

Hon. A. E. Burr, Hartford, President; Prof. C. A. Lindsley, M. D., New Haven, Secretary; Dr. J. S. Butler, Hartford; Prof. Wm. H. Brewer, New Haven; Dr. G. H. Wilson, Meriden; Hon. E. Johnson, Hartford; Dr. R. S. Goodwin, Thomaston.

## DELAWARE.

Dr. L. P. Bush, Wilmington, President; Dr. E. B. Fraser, Wilmington, Secretary; Dr. William Marshall, Milford; Dr. John K. Kane, Wilmington; Dr. George G. Chamberlain, Middleton; Dr. Albert Whiteley, Frederica; Dr. Edward Fowler, Laurel; Dr. David L. Mustard, Lewes; Dr. Wm. T. Skinner, Glasgow.

## ILLINOIS.

Newton Bateman, LL. D., Galesburg, President; Dr. John H. Rauch, Chicago, Secretary; Dr. A. L. Clark, Elgin, Treasurer; Dr. W. A. Haskell, Alton; Dr. W. R. Mackenzie, Chester; Dr. G. N. Kreider, Springfield; Dr. R. Ludlam, Chicago; A. W. H. Reen, Peoria.

## INDIANA.

Dr. Samuel R. Seawright, Lafayette, President; Dr. C. N. Metcalf, Indianapolis, Secretary and Executive Officer; Dr. Wm. Lomax, Marion; Dr. W. A. Fritsch, Evansville; Dr. S. S. Boots, Greenfield.

## IOWA.

Dr. Wm. S. Robertson, Muscatine, President; Dr. J. F. Kennedy, Des Moines, Secretary; L. F. Andrews, Assistant Secretary; Andrew J. Baker, Attorney General, ex-officio; M. Stalker, State Veterinary Surgeon, Ames, ex-officio; Dr. Wilmot H. Dickinson, Des Moines; Dr. S. B. Olney, Fort Dodge; Dr. Justin M. Hull, Sioux City; Dr. Philip W. Lewellen, Clarinda; Dr. Ephriam M. Reynolds, Centerville; Henry H. Clark, McGregor; James L. Loring, C. E., Dallas Center.

## KANSAS.

Dr. G. H. T. Johnson, Atchison, President; Dr. J. W. Redden, Topeka, Secretary; Dr. C. H. Guibor, Beloit; Dr. D. Surber, Perry; Dr. D. W. Stormont, Topeka; Dr. J. Milton Welch, Wichita; Dr. H. S. Roberts, Manhattan; Dr. J. W. Jenny, Salina; Dr. W. L. Schenck, Osage City; Dr. J. F. Lewis, Howard.

## KENTUCKY.

Dr. Pinckney Thompson, Henderson, President; Dr. J. N. McCormack, Bowling Green, Secretary; Dr. Robert Walker, Scottville; Dr. J. O. McReynolds, Elkton; Dr. W. L. Breyfogle, Louisville; Dr. J. A. Lucy, Georgetown; Dr. J. M. Poyntz, Richmond.

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## MARYLAND.

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## MASSACHUSETTS.

Dr. Henry P. Walcott, Cambridge, Chairman; Dr. Samuel W. Abbott, Wakefield, Secretary; Dr. Elijah U. Jones, Taunton; Julius H. Appleton, Springfield; Thornton K. Lothrop, Esq., Beverly Farms; Dr. Frank W. Draper, Boston; Hiram F. Mills, C. E., Lawrence; James White, Boston; F. P. Stearns, C. E., Engineer.

## MICHIGAN.

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## MISSISSIPPI.

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## NEW HAMPSHIRE.

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Dr. R. M. Swearingen, Austin, State Health Officer.

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# INDEX.

	PAGE.
Attorney General, opinion of . . . . .	184
Baths and bathing, by W. A. Fritsch, M. D., Evansville, Ind . . . . .	241
Births, Table A . . . . .	214
Births, Table B . . . . .	218
Births, Table C . . . . .	222
Blind, Asylum for . . . . .	133
Boards of health, County . . . . .	19
Boards of health, State . . . . .	33
Board of Health, report of . . . . .	5
Cholera . . . . .	101
Cholera infantum . . . . .	182
County Health Officers, Convention of . . . . .	33
Croup . . . . .	186
Dead bodies, receiving and transporting . . . . .	30
Deaf and Dumb, Institution for . . . . .	134
Deaths, Table A . . . . .	140
Deaths, Table B . . . . .	151
Deaths, Table C . . . . .	165
Deaths, Table D . . . . .	178
Diarrheal diseases . . . . .	182
Diphtheria . . . . .	187
Financial exhibit . . . . .	7
Health officers, letters from . . . . .	191
Health officers, city and town . . . . .	21
Hospital for Insane . . . . .	131
Hospital for Insane at Richmond . . . . .	107
Influence of mental states on physical health, by Jas. F. Hibberd, M. D., LL. D., Richmond, Ind . . . . .	239
Influence of mind over physical diseases, by G. M. Van Ausdall, M. D., of Jamestown, Ind . . . . .	232
Library . . . . .	9
Lung diseases, acute . . . . .	182
Malarial fevers . . . . .	181
Mammon greater than Hygeia, by J. S. Arwine, M. D., Columbus, Ind. . . . .	247
Marriages . . . . .	225
Marriages, Table A . . . . .	226
Marriages, Table B . . . . .	229
Northern Prison, inspection of . . . . .	108
Physicians' list . . . . .	257
Physicians, reports of . . . . .	134
Poor Asylums, by Wm. Lomax, M. D., Marion, Ind . . . . .	237
Pritchard, E. H., Dr., report of . . . . .	100
Proclamation by the Governor . . . . .	97
Quarterly reports, suggestions concerning . . . . .	27
Railroad property, supervision of . . . . .	103
Reformatory Institution for Women and Girls . . . . .	133
Reform School for Boys . . . . .	130
Rules Revised . . . . .	23

	PAGE.
Sanitary authorities and associations . . . . .	32
Scarlet fever . . . . .	188
Schools and school-houses. . . . .	66
Small-pox . . . . .	189
Southern Prison, inspection of . . . . .	105
State House, plumbing . . . . .	113
Stevens, Thaddeus M., M. D. . . . .	16
Study, J. N., Superintendent Richmond Schools . . . . .	68
Typhoid fever . . . . .	189
Vital and sanitary statistics. . . . .	137
Water, by A. G. Porter, M. D., Lebanon, Ind. . . . .	245
Zymotic diseases . . . . .	181

## INDEX TO PART II.

---

	PAGE
Animal vaccination . . . . .	24
Appendix . . . . .	83
Boards of health, county, how managed and directed . . . . .	29
Boards of health, local . . . . .	8
Boards of health, State. . . . .	6
Boards of health, State, upon what basis may they meet and enforce medical practice and education in the several States . . . . .	39
Comparative View of Sanitary Laws, by A. G. Young, M. D., of Maine . . . . .	4
Consumption, restriction of . . . . .	78
Contagious and infectious diseases, how best to prevent their spread . . . . .	48
Dead bodies, transportation of . . . . .	14
Dead bodies, transportation of, report on, by Benj. Lee, M. D., Secretary Board of Health, Pennsylvania . . . . .	60
Diseases, contagious . . . . .	11
Health officers, local, basis of compensation . . . . .	55
Horse-pox, cow-pox . . . . .	21
Indiana State House plumbing, by C. N. Metcalf, M. D., Secretary Indiana State Board of Health . . . . .	68
Indiana State House plumbing, report of committee . . . . .	80
Inter-State and inter-provincial notification of infectious diseases, by Peter H. Bryce, Health Officer of Ontario . . . . .	64
Investigation of the causes of disease; how best results secured . . . . .	56
Nuisances . . . . .	10
Outbreak of cholera, yellow fever and small-pox, notification of . . . . .	75
Preventive medicine, how much can be taught in public schools . . . . .	63
Report upon the outbreak of fever at Biloxi, Miss., by Lucien F. Salomon, M. D., Sec- retary State Board of Health, Louisiana . . . . .	33
Vaccine and vaccination . . . . .	22
Vital statistics, uniform system of blank forms . . . . .	76

